TFR 55

British Chemical Products

Chemwatch Hazard Alert Code: **4**

Part Number:
Version No: **1.1**
Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Initial Date: **21/07/2026**
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Print Date: **21/07/2026**
S.REACH.GB.EN.B

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

1.1. Product Identifier

Product name	TFR 55
Physical Form	Mixture
Synonyms	Not Available
Other means of identification	Not Available

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

Relevant identified uses	For trade and professional use only. Removes traffic film, oil and grease from commercial vehicles, and plastic/metal surfaces. Use carefully on Aluminium surfaces. Do not use on brass or zinc surfaces. Used in metal cleaning. Exercise extreme care when mixing with other chemicals. Do not mix with acids.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the manufacturer or importer of the safety data sheet

Manufacturer/Supplier	**British Chemical Products**
Address	Station Street Business Park Cinderford Glos United Kingdom of Great Britain and Northern Ireland
Telephone	08000 622 966
Fax	.
Website	www.britishchemicalproducts.co.uk
Email	admin@britishchemicalproducts.co.uk

1.4. Emergency telephone number

Association / Organisation	**.**
Emergency telephone number(s)	**08000 622 966**
Other emergency telephone number(s)	**.**

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability	0		
Toxicity	1		
Body Contact	4		
Reactivity	0		
Chronic	2		

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567[1]	H314 - Skin Corrosion/Irritation Category 1A, H317 - Sensitisation (Skin) Category 1, H318 - Serious Eye Damage/Eye Irritation Category 1
Legend:	***1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567***

2.2. Label elements

Hazard pictogram(s)

SIGNAL WORD	**DANGER**

Hazard statement(s)

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.

Supplementary statement(s)

Page 1 continued...

Not Applicable

Precautionary statement(s) Prevention

P260	Do not breathe mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P302+P352	IF ON SKIN: Wash with plenty of water.
P363	Wash contaminated clothing before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

Material contains sodium hydroxide, CAB 30, alcohols C9-11 ethoxylated.

2.3. Other hazards

Cumulative effects may result following exposure*.

Possible respiratory sensitizer*.

Ingestion may produce health damage*.

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

This substance/mixture does not meet the criteria for classification as Persistent, Bioaccumulative, and Toxic (PBT) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as very Persistent and very Bioaccumulative (vPvB) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as Persistent, Mobile and Toxic (PMT) in accordance with Commission Delegated Regulation (EU) 2023/707.

This substance/mixture does not meet the criteria for classification as very Persistent and very Mobile (vPvM) in accordance with Commission Delegated Regulation (EU) 2023/707.

The substance/mixture does not contain components considered to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, nor is it included in the list established under REACH Article 59(1), at concentrations equal to or greater than 0.1% (w/w).

No further product hazard information.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

See 'Composition on ingredients' in Section 3.2

3.2. Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 1310-73-2 2. 215-185-5 3. 011-002-00-6 4. Not Available	1-5	sodium hydroxide	Skin Corrosion/Irritation Category 1A; H314[2]	Skin Corr. 1A; H314: C ≥ 5 %, Skin Corr. 1B; H314: 2 % ≤ C < 5 %, Skin Irrit. 2; H315: 0,5 % ≤ C < 2 %, Eye Irrit. 2; H319: 0,5 % ≤ C < 2 % Acute M factor:Not Applicable Chronic M factor:Not Applicable	Not Available
1. 147170-44-3 2. Not Available 3. Not Available 4. Not Available	1-3	CAB 30	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/ Eye Irritation Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 3; H302, H315, H317, H318, H412[1]	SCL: Not Available Acute M factor:Not Applicable Chronic M factor:Not Applicable	Not Available
1. 497-19-8 2. 207-838-8	2	sodium carbonate	Serious Eye Damage/Eye Irritation Category 2; H319[2]	SCL: Not Available	Not Available

Continued...

3. 011-005-00-2 4. Not Available				Acute M factor:Not Applicable Chronic M factor:Not Applicable	
1. 68439-46-3 2. 614-482-0 3. Not Available 4. Not Available	>1.875	alcohols C9-11 ethoxylated	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1; H302, H315, H318, H400[1]	SCL: Not Available Acute M factor:1 Chronic M factor:Not Applicable	Not Available

Legend: *1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available*

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: • Immediately hold eyelids apart and flush the eye continuously with running water. • Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. • Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. • Transport to hospital or doctor without delay. • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: • Immediately flush body and clothes with large amounts of water, using safety shower if available. • Quickly remove all contaminated clothing, including footwear. • Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. • Transport to hospital, or doctor.
Inhalation	• If fumes or combustion products are inhaled remove from contaminated area. • Lay patient down. Keep warm and rested. • Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. • Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. • Transport to hospital, or doctor, without delay. • Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. • Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). • As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. • Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. **This must definitely be left to a doctor or person authorised by him/her.** (ICSC13719)
Ingestion	• For advice, contact a Poisons Information Centre or a doctor at once. • Urgent hospital treatment is likely to be needed. • If swallowed do **NOT** induce vomiting. • If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. • Observe the patient carefully. • Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. • Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. • Transport to hospital or doctor without delay.

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

See Section 11

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

Treat symptomatically.
For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.
INGESTION:
- Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.
* Activated charcoal does not absorb alkali.
* Gastric lavage should not be used.

Supportive care involves the following:
- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:
- Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Continued...

5.1. Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

5.3. Advice for firefighters

Fire Fighting	• Alert Fire Brigade and tell them location and nature of hazard. • Wear full body protective clothing with breathing apparatus. • Prevent, by any means available, spillage from entering drains or water course. • Use fire fighting procedures suitable for surrounding area. • **Do not** approach containers suspected to be hot. • Cool fire exposed containers with water spray from a protected location. • If safe to do so, remove containers from path of fire. • Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	• Non combustible. • Not considered a significant fire risk, however containers may burn. May emit corrosive fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	• Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. • Check regularly for spills and leaks. • Clean up all spills immediately. • Avoid breathing vapours and contact with skin and eyes. • Control personal contact with the substance, by using protective equipment. • Contain and absorb spill with sand, earth, inert material or vermiculite. • Wipe up. • Place in a suitable, labelled container for waste disposal.
Major Spills	• Clear area of personnel and move upwind. • Alert Fire Brigade and tell them location and nature of hazard. • Wear full body protective clothing with breathing apparatus. • Prevent, by any means available, spillage from entering drains or water course. • Consider evacuation (or protect in place). • Stop leak if safe to do so. • Contain spill with sand, earth or vermiculite. • Collect recoverable product into labelled containers for recycling. • Neutralise/decontaminate residue (see Section 13 for specific agent). • Collect solid residues and seal in labelled drums for disposal. • Wash area and prevent runoff into drains. • After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. • If contamination of drains or waterways occurs, advise emergency services.

6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling	• Avoid skin contact, including inhalation. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • **WARNING:** To avoid violent reaction, **ALWAYS** add material to water and **NEVER** water to material. • Avoid smoking, naked lights or ignition sources. • Avoid contact with incompatible materials. • When handling, **DO NOT** eat, drink or smoke. • Keep containers securely sealed when not in use. • Avoid physical damage to containers. • Always wash hands with soap and water after handling. • Work clothes should be laundered separately. Launder contaminated clothing before re-use. • Use good occupational work practice. • Observe manufacturer's storage and handling recommendations contained within this SDS. • Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. • **DO NOT** allow clothing wet with material to stay in contact with skin
Fire and explosion protection	See section 5
Other information	• Store in original containers. • Keep containers securely sealed. • Store in a cool, dry, well-ventilated area. • Store away from incompatible materials and foodstuff containers. • Protect containers against physical damage and check regularly for leaks. • Observe manufacturer's storage and handling recommendations contained within this SDS.

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	• **DO NOT** store near acids, or oxidising agents • No smoking, naked lights, heat or ignition sources.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	• Lined metal can, lined metal pail/ can. • Plastic pail. • Polyliner drum. • Packing as recommended by manufacturer. • Check all containers are clearly labelled and free from leaks. For low viscosity materials • Drums and jerricans must be of the non-removable head type. • Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.): • Removable head packaging; • Cans with friction closures and • low pressure tubes and cartridges may be used. - Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	• Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. • Avoid contact with copper, aluminium and their alloys.
Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)	Not Available
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	Not Available

+ × ○ × + + +

× – ***Must not be stored together***
○ – ***May be stored together with specific preventions***
\+ – ***May be stored together***
Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
sodium hydroxide	Inhalation 1 mg/m³ (Local, Chronic) ***Inhalation 1 mg/m³ (Local, Chronic) ****	Not Available
CAB 30	Dermal 12.5 mg/kg bw/day (Systemic, Chronic) Inhalation 44 mg/m³ (Systemic, Chronic) ***Dermal 7.5 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 13.04 mg/m³ (Systemic, Chronic) **** ***Oral 7.5 mg/kg bw/day (Systemic, Chronic) ****	0.013 mg/L (Water (Fresh)) 0.001 mg/L (Water (Marine)) 14.8 mg/kg sediment dw (Sediment (Fresh Water)) 1.48 mg/kg sediment dw (Sediment (Marine)) 0.8 mg/kg soil dw (Soil) 3000 mg/L (STP)
sodium carbonate	Inhalation 10 mg/m³ (Local, Chronic) ***Inhalation 5 mg/m³ (Local, Chronic) ****	Not Available
alcohols C9-11 ethoxylated	Dermal 2080 mg/kg bw/day (Systemic, Chronic) Inhalation 294 mg/m³ (Systemic, Chronic) ***Dermal 1250 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 87 mg/m³ (Systemic, Chronic) **** ***Oral 25 mg/kg bw/day (Systemic, Chronic) ****	0.104 mg/L (Water (Fresh)) 0.014 mg/L (Water - Intermittent release) 0.104 mg/L (Water (Marine)) 13.7 mg/kg sediment dw (Sediment (Fresh Water)) 13.7 mg/kg sediment dw (Sediment (Marine)) 1 mg/kg soil dw (Soil) 1.4 mg/L (STP)

* Values for General Population

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	sodium hydroxide	Sodium hydroxide	Not Available	2 mg/m3	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
sodium hydroxide	Not Available	Not Available	Not Available

Continued...

sodium carbonate	7.6 mg/m3	83 mg/m3	500 mg/m3

OCCUPATIONAL EXPOSURE BANDING

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
CAB 30	E	≤ 0.1 ppm
sodium carbonate	C	> 0.1 to ≤ 1 milligrams per cubic meter of air (mg/m³)
alcohols C9-11 ethoxylated	E	≤ 0.1 ppm
Notes:	***Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.***	

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

8.2.2. Individual protection measures, such as personal protective equipment

Eye and face protection

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.
- Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.[AS/NZS 1337.1, EN166 or national equivalent]
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

Hands/feet protection

- Elbow length PVC gloves
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

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	Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below
Other protection	• Overalls. • PVC Apron. • PVC protective suit may be required if exposure severe. • Eyewash unit. • Ensure there is ready access to a safety shower.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
TFR 55

Material	CPI
BUTYL	C
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE	C
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/CHLOROBUTYL	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	AK-AUS / Class1 P2	-
up to 50	1000	-	AK-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	AK-2 P2
up to 100	10000	-	AK-3 P2
100+			Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

8.2.3. Environmental exposure controls

See section 12

Continued...

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Yellow, mobile liquid

Physical state	Liquid	**Relative density (Water = 1)**	1.08
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	>14	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Miscible	**pH as a solution (1%)**	13
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available
Heat of Combustion (kJ/g)	Not Available	**Ignition Distance (cm)**	Not Available
Flame Height (cm)	Not Available	**Flame Duration (s)**	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	**Enclosed Space Ignition Deflagration Density (g/m3)**	Not Available
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity	See section 7.2
10.2. Chemical stability	• Unstable in the presence of incompatible materials. • Product is considered stable. • Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a) Acute Toxicity	Based on available data, the classification criteria are not met.
b) Skin Irritation/Corrosion	There is sufficient evidence to classify this material as skin corrosive or irritating.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	There is sufficient evidence to classify this material as sensitising to skin or the respiratory system
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	Based on available data, the classification criteria are not met.
g) Reproductivity	Based on available data, the classification criteria are not met.
h) STOT - Single Exposure	Based on available data, the classification criteria are not met.
i) STOT - Repeated Exposure	Based on available data, the classification criteria are not met.
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. The material has **NOT** been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence.
Ingestion	Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow. NMDA antagonists may cause irreversible damage to the nervous system akin to those caused by PCP (angel dust). Certain NMDA antagonists (notably those used to produce anaesthesia) induce arousal, seizures and a psychosis resembling schizophrenia.

Continued...

	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep.
Eye	If applied to the eyes, this material causes severe eye damage. Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity.

TFR 55	TOXICITY	IRRITATION
	Not Available	Not Available

sodium hydroxide	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 1350 mg/kg [2]	Eye (Primate - monkey): 1%/24H - Severe
	Oral (Rabbit) LD50; 325 mg/kg [1]	Eye (Rodent - rabbit): 1% - Severe
		Eye (Rodent - rabbit): 100mg
		Eye (Rodent - rabbit): 1mg/24H - Severe
		Eye (Rodent - rabbit): 1mg/30S - Severe
		Eye (Rodent - rabbit): 400ug - Mild
		Eye (Rodent - rabbit): 50ug/24H - Severe
		Eye: adverse effect observed (irritating) [1]
		Skin (Human): 0.15%/96H
		Skin (Human): 10pph/24H - Severe
		Skin (Human): 2.50%/24H
		Skin (Human): 2%/24H - Mild
		Skin (Rodent - rabbit): 500mg/24H - Severe
		Skin: adverse effect observed (corrosive) [1]

CAB 30	TOXICITY	IRRITATION
	dermal (rat) LD50: >620 mg/kg [1]	Eye: adverse effect observed (irreversible damage) [1]
	Oral (Rat) LD50: ~1530 mg/kg [1]	Skin: no adverse effect observed (not irritating) [1]

sodium carbonate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg [2]	Eye (Rodent - rabbit): 100mg/24H - Moderate
	Oral (Rat) LD50: 2800 mg/kg [2]	Eye (Rodent - rabbit): 100mg/30S - Mild
		Eye (Rodent - rabbit): 50mg - Severe
		Eye: adverse effect observed (irritating) [1]
		Skin (Rodent - rabbit): 500mg/24H - Mild
		Skin: no adverse effect observed (not irritating) [1]

alcohols C9-11 ethoxylated	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg [2]	Eye: adverse effect observed (irritating) [1]
	Inhalation (Rat) LC50: >1.6 mg/l4h [1]	Skin: no adverse effect observed (not irritating) [1]
	Oral (Rat) LD50: 1378 mg/kg [2]	

Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

CAB 30	NMDA receptor antagonists induce a state called dissociative anesthesia, marked by catalepsy, amnesia, and analgesia. Depressed NMDA receptor function is associated with an array of negative symptoms. For example, NMDA receptor hypofunction that occurs as the brain ages may be partially responsible for memory deficits associated with aging. Schizophrenia may also have to do with irregular NMDA receptor function (the glutamate hypothesis of schizophrenia). Increased levels of another NMDA antagonist, kynurenic acid, may aggravate the symptoms of schizophrenia, according to the "kynurenic hypothesis". NMDA receptor antagonists can mimic these problems; they sometimes induce "psychotomimetic" side effects, symptoms resembling psychosis. Such side effects caused by NMDA receptor inhibitors include hallucinations, paranoid delusions, confusion, difficulty concentrating, agitation, alterations in mood, nightmares, catatonia, ataxia, anesthesia, and learning and memory deficits. Because of these psychotomimetic effects, NMDA receptor antagonists, especially phencyclidine, ketamine, and dextromethorphan, are used as recreational drugs. At subanesthetic doses, these drugs have mild stimulant effects and, at higher doses, begin inducing dissociation and hallucinations, though these effects and the strength thereof vary from drug to drug. Frequent administration of most NMDA receptor antagonists can lead to tolerance, whereby the liver will more quickly eliminate NMDA receptor antagonists from the bloodstream. Temporary and permanent cognitive impairments have been shown to occur in long-term or heavy human users of the NMDA antagonists PCP and ketamine. Poor and short-term clinical responses have become a significant issue in the use of pan-BET small-molecule inhibitors for the clinical treatment of cancer.

Continued...

	New technologies have been developed to facilitate the discovery of novel inhibitors, such as BD1-, BD2-, or BRD4-selective inhibitors, BET proteolysis targeting chimeras (PROTACs), dual-target inhibitors, and protein-protein interaction (PPI) inhibitors. Among these inhibitors, pan-BET inhibitors show no selectivity against specific BET protein isoforms or bromodomains, BD1- and BD2-selective inhibitors imply pan-BET activity toward BRD2/3/4/T but with selectivity for specific bromodomains, and BRD4-selective inhibitors mean target preference for BRD4 rather than BRD2/3/T but without bromodomain selectivity. A report depicting functional differences between BD1 and BD2 highlights the potential for developing BD1-specific inhibitors in cancer therapy and BD2-specific inhibitors in immuno inflammation that may be more favorable compared with nonselective BET bromodomain targeting. bromodomain and extraterminal (BET) proteins bind acetylated lysine residues in histones and nonhistone proteins via tandem bromodomains and regulate chromatin dynamics, cellular processes, and disease procession. Thus targeting BET proteins is a promising strategy for treating various diseases, especially malignant tumors and chronic inflammation. Many pan-BET small-molecule inhibitors have been described, and some of them are in clinical evaluation. Nevertheless, the limited clinical efflcacy of the current BET inhibitors is also evident and has inspired the development of new technologies to improve their clinical outcomes and minimize unwanted side effects.Although small-molecule pan-BET inhibitors show promising effects in clinical evaluation, there are still problems and challenges to overcome, such as the moderate clinical efflcacy and the occurrence of preclinical resistance However, the clinical advancement of most pan-BET inhibitors is still in the early stages and mainly focuses on cancer treatment. The results of clinical trials published to date raise several key issues to be considered. First, some inhibitors display toxicity during clinical trials, including dose-limiting toxicity (DLT). The most common adverse effects are thrombocytopenia, diarrhea, fatigue, vomiting, anemia, and hyperbilirubinemia. A commonly observed DLT is thrombocytopenia with undamaged platelet function. Reduced platelet counts were reversible and could be restored within 1 week after drug withdrawal.46 In addition, complications and immunodeficiency are potential undesirable reactions to the use of pan-BET inhibitors. several inhibitors exhibited much lower antitumor activity than those observed in preclinical trials. Pan-BET inhibitors show a significant survival advantage in tumor models, which are often abrogated in transplants of drug-resistant cells The main reason for the lack of clinical efficacy is likely due to a failure to identify the right group of patients most likely to benefit from pan-BET inhibitor treatment, resulting in ineffectual dosing before DLT occurs. Moreover, modest outcomes may be partly attributed to the development of resistance, diminishing the clinical response to pan-BET inhibitors. ch of BRD4, problems with preclinical drug resistance have attracted significant attention. In drug resistance, the activation of alternative or compensatory pathways such as WNT/ß-catenin and hedgehog signaling can maintain MYC expression independently of BRD4 In pan-BET inhibitor-resistant leukemia cells, genome-wide BRD4 binding is decreased upon BET inhibitor treatment, but alternative binding by ß-catenin to key oncogenic sites or nearby WNT-responsive enhancers maintains MYC expression.48 In addition, the activation of the hedgehog signaling pathway is another mechanism to restore MYC expression through altered transcription programming. The phosphorylation of BRD4, which is crucial for chromatin binding and factor recruitment,8 also has a great effect on the drug resistance, as shown in triple-negative breast cancer (TNBC) cells. Significantly increased BRD4 phosphorylation (or hyperphosphorylation) due to reduced PP2A activity results in a stronger association of BRD4 with the MED1 component of the mediator complex that recruits RNA Pol II to the promoter region, thereby promoting bromodomain-independent gene activation via an alternative protein-protein (i.e., BRD4-mediator) recruitment mechanism.11,51 BRD4 hyperphosphorylation has also been observed in NMC to support its oncogenic activity Furthermore, adapted apoptotic signaling through AMPK/ULK1-mediated autophagy represents another resistance mechanism to BRD4 inhibitors in certain JQ1-resistant acute myelogenous leukemia (AML) cells, where reduced apoptosis is achieved by JQ1-induced prosurvival autophagy, as the pharmacological inhibition of AMPK leads to diminished ULK1-mediated autophagy and increased apoptosis.. Conceivably, the activity of the E3 ubiquitin ligase adaptor SPOP (speckle-type POZ protein) and deubiquitinase DUB3 that directly modulate the BRD4 protein stability may potentially account for the drug resistance, as a deficiency in SPOP binding to BRD4 results in the enhanced BRD4-dependent expression of RAC1 GTPase and the activation of cholesterol biosynthetic enzymes and AKT-mTORC1 to mediate intrinsic resistance. Likewise, a mutation in NCOR2 that negatively regulates DUB3 gene transcription frequently observed in castration-resistant prostate cancer (CRPC) leads to enhanced DUB3 and BRD4 protein levels, thus contributing to resistance to BRD4 inhibitor treatment. Moreover, a mutation in PI3KCA has also been identified as a resistance determinant to BRD4 inhibitors based on whole-genome shRNA dropout screens performed in 77 breast cancer cell lines. Notably, in preclinical models, the complexity of drug resistance with diverse factors and pathways involved greatly diminishes the clinical responses. Tang P, Zhang J, Liu J, Chiang CM, Ouyang L. Targeting Bromodomain and Extraterminal Proteins for Drug Discovery: From Current Progress to Technological Development. J Med Chem. 2021 Mar 11;64(5):2419-2435. doi: 10.1021/acs.jmedchem.0c01487. Epub 2021 Feb 22. PMID: 33616410; PMCID: PMC8106541 AAO (D-amino acid oxidase) modulators—primarily DAAO inhibitors like sodium benzoate—are investigated for their potential to enhance NMDA receptor function. While generally safe, their adverse effect profile centers on potential metabolic, psychiatric, and renal consequences tied to altered amino acid and oxidative kown and theoretical side effects of DAAO modulation include: Metabolic and Gastrointestinal: High-dose amino acid or DAAO modulation can cause mild gastrointestinal distress, including transient water retention, bloating, diarrhea, and vomiting. Renal Strain: DAAO naturally breaks down D-serine in the kidneys. Inhibiting DAAO can result in excessive D-serine exposure, which has been linked to potential nephrotoxicity (kidney damage) and tubule dysfunction, particularly in subjects with pre-existing kidney conditions. Neuropsychiatric Effects: Because DAAO modulators increase the availability of D-serine—an NMDA receptor co-agonist—excessive dosage may lead to glutamate excitotoxicity or transient psychotomimetic effects. Some clinical trial data notes potential mild occurrences of insomnia adverse effects of Ionotropic Glutamate Receptor (iGluR) modulators (such as NMDA or AMPA antagonists) primarily stem from blocking central nervous system excitation. The (AMPA receptor, AMPAR, or quisqualate receptor) is a nonselective ionotropic glutamate receptor (iGluR) that mediates fast excitatory neurotransmission in the central nervous system (CNS). Clinical trial data shows that strongly inhibiting these receptors frequently triggers severe neuropsychiatric and motor side effects, including hallucination, psychosis-like symptoms, memory impairment, confusion, ataxia, and sedation Because iGluRs are highly complex tetrameric ion channels with varied subunit compositions across different brain regions, researchers are increasingly focusing on allosteric modulators to improve targeted specificity and reduce toxicity. the AMPAR's permeability to calcium and other cations, such as sodium and potassium, is governed by the GluA2 subunit. If an AMPAR lacks a GluA2 subunit, then it will be permeable to sodium, potassium, and calcium. The presence of a GluA2 subunit will render the channel impermeable to calcium Most undiluted cationic surfactants satisfy the criteria for classification as Harmful (Xn) with R22 and as Irritant (Xi) for skin and eyes with R38 and R41. Amphoteric surfactants are easily absorbed in the gut and partly excreted unchanged in the faeces. It has not been shown to accumulate in the body. Concentrated betaines are expected to irritate the skin and eyes, but dilute solutions only irritate the eyes. No evidence of delayed contact hypersensitivity was found in animal testing. Tests for mutation-causing potential have proved negative.
sodium carbonate	For sodium carbonate: Sodium carbonate has little potential for skin irritation, but is irritating to the eyes. Due to its alkaline properties, irritation of the airways is also possible. There is no data available for animal studies regarding the repeated dose toxicity of sodium carbonate by any route. There is no evidence that sodium carbonate causes whole-body effects under normal handling and use. Sodium carbonate does not reach the foetus or the reproductive organs, which shows that there is no risk for developmental or reproductive toxicity. Sodium carbonate has not been shown to cause genetic toxicity or mutations. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
alcohols C9-11 ethoxylated	Somnolence, ataxia, diarrhoea recorded. Polyethers (such as ethoxylated surfactants and polyethylene glycols) are highly susceptible to being oxidized in the air. They then form complex mixtures of oxidation products. Animal testing reveals that whole the pure, non-oxidised surfactant is non-sensitizing, many of the oxidation products are sensitisers. The oxidization products also cause irritation.

Continued...

	Humans have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents and other cleaning products. Exposure to these chemicals can occur through swallowing, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that relatively high volumes would have to occur to produce any toxic response. No death due to poisoning with alcohol ethoxylates has ever been reported. Studies show that alcohol ethoxylates have low toxicity through swallowing and skin contact. Animal studies show these chemicals may produce gastrointestinal irritation, stomach ulcers, hair standing up, diarrhea and lethargy. Slight to severe irritation occurred when undiluted alcohol ethyoxylates were applied to the skin and eyes of animals. These chemicals show no indication of genetic toxicity or potential to cause mutations and cancers. Toxicity is thought to be substantially lower than that of nonylphenol ethoxylates. Some of the oxidation products of this group of substances may have sensitizing properties. As they cause less irritation, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their tendency to auto-oxidise also increases their irritation. Due to their irritating effect it is difficult to diagnose allergic contact dermatitis (ACD) by patch testing. Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or cancer. No adverse reproductive or developmental effects were observed. Tri-ethylene glycol ethers undergo enzymatic oxidation to toxic alkoxy acids. They may irritate the skin and the eyes. At high oral doses, they may cause depressed reflexes, flaccid muscle tone, breathing difficulty and coma. Death may result in experimental animal. However, repeated exposure may cause dose dependent damage to the kidneys as well as reproductive and developmental defects.
TFR 55 & CAB 30	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
TFR 55 & sodium hydroxide & sodium carbonate	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.
sodium hydroxide & alcohols C9-11 ethoxylated	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✓	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

TFR 55

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available

sodium hydroxide

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
EC50	48h	Crustacea	34.59-47.13mg/l	4
EC50(ECx)	48h	Crustacea	34.59-47.13mg/l	4
LC50	96h	Fish	144-267mg/l	4

CAB 30

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
EC50	72h	Algae or other aquatic plants	~0.57mg/l	2
EC50	48h	Crustacea	6.5mg/l	Not Available
NOEC(ECx)	504h	Crustacea	0.9mg/l	Not Available
EC50	96h	Algae or other aquatic plants	~8mg/l	2
LC50	96h	Fish	1-10mg/l	Not Available

sodium carbonate

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE

Continued...

	EC50	72h	Algae or other aquatic plants	>800mg/l	2
	NOEC(ECx)	48h	Fish	0.011mg/L	4
	EC50	48h	Crustacea	156.6-298.9mg/l	4
	EC50	96h	Algae or other aquatic plants	242mg/L	4
	LC50	96h	Fish	300mg/l	2

alcohols C9-11 ethoxylated	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	48h	Crustacea	2.217-3.523mg/L	4
	EC50	96h	Algae or other aquatic plants	1.4mg/l	2
	NOEC(ECx)	720h	Fish	0.11-0.28mg/l	2
	LC50	96h	Fish	7mg/l	Not Available

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data*

Harmful to aquatic organisms.
Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
sodium hydroxide	LOW	LOW
sodium carbonate	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
sodium hydroxide	LOW (LogKOW = -3.88)
sodium carbonate	LOW (LogKOW = -0.4605)
alcohols C9-11 ethoxylated	LOW (LogKOW = 2.42)

12.4. Mobility in soil

Ingredient	Mobility
sodium hydroxide	LOW (KOC = 14.3)
sodium carbonate	HIGH (KOC = 1)

12.5. Results of PBT and vPvB assessment

	P	B	T	PBT criteria fulfilled?	vP	vB	vPvB criteria fulfilled?
TFR 55	No data available	No data available	No data available	No	No data available	No data available	No
sodium hydroxide	✗	✗	✗	No	✗	✗	No
CAB 30	# No data available	# No data available	# No data available	No	# No data available	# No data available	No
sodium carbonate	✗	✗	✗	No	✗	✗	No
alcohols C9-11 ethoxylated	✗	✗	✗	No	✗	✗	No

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product / Packaging disposal

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction

Continued...

	• Reuse • Recycling • Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. • **DO NOT** allow wash water from cleaning or process equipment to enter drains. • It may be necessary to collect all wash water for treatment before disposal. • In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. • Where in doubt contact the responsible authority. • Recycle wherever possible. • Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. • Treat and neutralise at an approved treatment plant. • Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material). • Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	2X

Land transport (ADR-RID)

14.1. **UN number or ID number**	3266
14.2. **UN proper shipping name**	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (contains sodium hydroxide)
14.3. **Transport hazard class(es)**	Class: 8 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard identification (Kemler): 80 Classification code: C5 Hazard Label: 8 Special provisions: 274 Limited quantity: 1 L Transport Category: 2 Tunnel Restriction Code: E

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	3266
14.2. **UN proper shipping name**	Corrosive liquid, basic, inorganic, n.o.s. * (contains sodium hydroxide)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 8 ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: 8L
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A3 A803 Cargo Only Packing Instructions: 855 Cargo Only Maximum Qty / Pack: 30 L Passenger and Cargo Packing Instructions: 851 Passenger and Cargo Maximum Qty / Pack: 1 L Passenger and Cargo Limited Quantity Packing Instructions: Y840 Passenger and Cargo Limited Maximum Qty / Pack: 0.5 L

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	3266
14.2. **UN proper shipping name**	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (contains sodium hydroxide)

Continued...

14.3. **Transport hazard class(es)**	IMDG Class	8
	IMDG Subsidiary Hazard	Not Applicable
14.4. **Packing group**	II	
14.5. **Environmental hazard**	Not Applicable	
14.6. **Special precautions for user**	EMS Number	F-A, S-B
	Special provisions	274
	Limited Quantities	1 L

Inland waterways transport (ADN)

14.1. **UN number**	3266	
14.2. **UN proper shipping name**	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (contains sodium hydroxide)	
14.3. **Transport hazard class(es)**	8	Not Applicable
14.4. **Packing group**	II	
14.5. **Environmental hazard**	Not Applicable	
14.6. **Special precautions for user**	Classification code	C5
	Special provisions	274
	Limited quantity	1 L
	Equipment required	PP, EP
	Fire cones number	0

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
sodium hydroxide	Not Applicable
CAB 30	Not Applicable
sodium carbonate	Not Applicable
alcohols C9-11 ethoxylated	Not Applicable

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
sodium hydroxide	Not Applicable
CAB 30	Not Applicable
sodium carbonate	Not Applicable
alcohols C9-11 ethoxylated	Not Applicable

SECTION 15 REGULATORY INFORMATION

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

SODIUM HYDROXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- UK Workplace Exposure Limits (WELs)
- European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI (ATP22)
- EU Regulation (EC) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 on cosmetic products - Annex III - List of Substances which cosmetic products must not contain except subject to the restrictions laid down
- Europe EC Inventory
- European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
- Europe European Customs Inventory of Chemical Substances- ECICS
- Great Britain GB mandatory classification and labelling list (GB MCL List)
- UK Eurotunnel's dangerous goods guide 2023 - List of dangerous goods accepted
- UK Workplace Exposure Limits (WELs).

CAB 30 IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Not Applicable

SODIUM CARBONATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI (ATP22)
- Europe EC Inventory
- European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
- Great Britain GB mandatory classification and labelling list (GB MCL List)

ALCOHOLS C9-11 ETHOXYLATED IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Europe European Customs Inventory of Chemical Substances- ECICS
- UK Eurotunnel's dangerous goods guide 2023 - List of dangerous goods accepted

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Continued...

Information according to 2012/18/EU (Seveso III):

Seveso Category	Not Available

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
sodium hydroxide	1310-73-2	011-002-00-6	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Corr. 1A	GHS05; Dgr	H314
2	Skin Corr. 1A; Eye Dam. 1	GHS05; Dgr	H314
1	Skin Corr. 1A	GHS05; Dgr	H314
2	Met. Corr. 1; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; Acute Tox. 4; Acute Tox. 4; Aquatic Chronic 3; STOT SE 1; Aquatic Acute 3	GHS05; Dgr; GHS06; GHS08	H290; H314; H318; H335; H412; H370; H312; H302; H402

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
CAB 30	147170-44-3	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Dam. 1; Aquatic Chronic 3	GHS05; Dgr	H318; H412
2	Eye Dam. 1; Aquatic Chronic 3	GHS05; Dgr	H318; H412

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
sodium carbonate	497-19-8	011-005-00-2	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Irrit. 2	GHS07; Wng	H319
2	Eye Irrit. 2	GHS07; Wng	H319
1	Eye Irrit. 2	GHS07; Wng	H319
2	Eye Irrit. 2; Acute Tox. 4; Skin Irrit. 2; STOT SE 3; Acute Tox. 4; Acute Tox. 4; STOT RE 2	GHS08; Dgr	H319; H332; H252; H261; H312; H302; H335; H373
1	Not Classified	Not Available	Not Available
2	Not Classified	Not Available	Not Available

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
alcohols C9-11 ethoxylated	68439-46-3	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Eye Dam. 1	GHS05; Dgr	H302; H318
2	Eye Dam. 1; Acute Tox. 4; Aquatic Chronic 3	Dgr; GHS05	H318; H302; H412

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Additional State Regulatory Information

Not Available

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (CAB 30)
Canada - NDSL	No (sodium hydroxide, CAB 30, sodium carbonate, alcohols C9-11 ethoxylated)
China - IECSC	Yes
Columbia - Columbia National Industrial Chemicals Inventory	No (sodium hydroxide, CAB 30, sodium carbonate, alcohols C9-11 ethoxylated)
Europe - EINEC / ELINCS / NLP	No (CAB 30, alcohols C9-11 ethoxylated)
Japan - ENCS	No (CAB 30)

Continued...

Korea - KECI	No (CAB 30)
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	No (CAB 30)
Vietnam - NCI	Yes
Russia - FBEPH	No (CAB 30, alcohols C9-11 ethoxylated)
UAE - Control List (Banned/Restricted Substances)	No (sodium hydroxide, CAB 30, sodium carbonate, alcohols C9-11 ethoxylated)
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 OTHER INFORMATION

Revision Date	21/07/2026
Initial Date	21/07/2026

Full text Risk and Hazard codes

H252	Self-heating in large quantities; may catch fire.
H261	In contact with water releases flammable gases.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Other information

Ingredients with multiple cas numbers

Name	CAS No
sodium hydroxide	1310-73-2, 12200-64-5
sodium carbonate	497-19-8, 7542-12-3, 1314087-39-2, 1332-57-6, 1977561-09-3
alcohols C9-11 ethoxylated	68439-46-3, 68-43-9, 1256920-45-2, 278798-74-6, 342042-70-0, 57107-69-4, 58318-61-9, 60937-75-9, 60937-76-0, 68954-96-1

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships

Continued...

- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code
- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Skin Corrosion/Irritation Category 1A, H314	Minimum classification
Sensitisation (Skin) Category 1, H317	Calculation method
Serious Eye Damage/Eye Irritation Category 1, H318	Calculation method

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end of SDS