Dow Chemical Company Ltd encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

Section 1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifiers
Product Name
EZI-GUN SURFACE PREPARATION CLEANER

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

Identified uses
Cleaner. For use in automotive applications.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION
Dow Chemical Company Ltd
Diamond House, Lotus Park
Kingsbury Crescent
TW18 3AG Staines, Middlesex
United Kingdom

Customer Information Number: 0203 139 4000
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 0031 115 694 982
Local Emergency Contact: 00 31 115 69 4982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to EU Directives 67/548/EEC or 1999/45/EC

R10 Flammable.

2.2 Label elements

Labelling according to EC Directives
Risk Phrases :

R10 **-** Flammable.

Safety Phrases :
S60 **-** This material and its container must be disposed of as hazardous waste.

2.3 Other Hazards
No information available.

Section 3. Composition/information on ingredients

3.2 Mixture
This product is a mixture.

CAS-No. / EC-No. / Index	REACH No.	Amount	Component	Classification: REGULATION (EC) No 1272/2008
CAS-No. 67-63-0 **EC-No.** 200-661-7 **Index** 603-117-00-0	—	> 5.0 - < 15.0 %	Propan-2-ol; isopropyl alcohol; isopropanol	Flam. Liq., 2, H225 Eye Irrit., 2, H319 STOT SE, 3, H336
CAS-No. 111-76-2 **EC-No.** 203-905-0 **Index** 603-014-00-0	—	< 5.0 %	2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve	Acute Tox., 4, H332 Acute Tox., 4, H312 Acute Tox., 4, H302 Eye cor/irr, 2, H319 Skin cor/irr, 2, H315

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 67-63-0 **EC-No.** 200-661-7 **Index** 603-117-00-0	> 5.0 - < 15.0 %	Propan-2-ol; isopropyl alcohol; isopropanol	F: R11; Xi: R36; R67
CAS-No. 111-76-2 **EC-No.** 203-905-0 **Index** 603-014-00-0	< 5.0 %	2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve	Xn: R20/21/22; Xi: R36/38

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

Section 4. First-aid measures

4.1 Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Skin Contact: Wash skin with plenty of water.
Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank 1998, King et al, 1970). No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Skin contact may aggravate preexisting dermatitis.

Section 5. Fire Fighting Measures

5.1 Extinguishing Media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards: None known.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Burning liquids may be extinguished by dilution with water. Eliminate ignition sources. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Confined space entry procedures must be followed before entering the area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Cat litter. Sand. Sawdust. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Handling

General Handling: Keep away from heat, sparks and flame. Avoid contact with eyes. Do not swallow. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Do not enter confined spaces unless adequately ventilated. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame.

Shelf life: Use within	**Storage temperature:**
30 Months	5 - 25 ℃

7.3 Specific end uses

See the technical data sheet on this product for further information.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure Limits

Component	List	Type	Value
Propan-2-ol; isopropyl alcohol; isopropanol	UK WEL	TWA	999 mg/m3 400 ppm
	UK WEL	STEL	1,250 mg/m3 500 ppm
	ACGIH	TWA	200 ppm BEI
	ACGIH	STEL	400 ppm BEI
	Ireland OELV	TWA	200 ppm SKIN
	Ireland OELV	STEL	400 ppm SKIN
2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve	ACGIH	TWA	20 ppm
	EU IOELV	TWA	98 mg/m3 20 ppm SKIN
	EU IOELV	STEL	246 mg/m3 50 ppm SKIN
	UK WEL	TWA	25 ppm SKIN
	UK WEL	STEL	50 ppm SKIN

A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

A “skin” notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.
It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.
Skin Protection: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Neoprene. Chlorinated polyethylene. Natural rubber (“latex”). Polyvinyl chloride (“PVC” or “vinyl”). Nitrile/butadiene rubber (“nitrile” or “NBR”). Ethyl vinyl alcohol laminate (“EVAL”). Avoid gloves made of: Polyvinyl alcohol (“PVA”). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 ºC)
Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

Section 9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical State	Liquid.
Color	Blue
Odor	Alcohol.
Odor Threshold	No test data available
pH	8.5 *Calculated*
Melting Point	Not applicable to liquids
Freezing Point	No test data available
Boiling Point (760 mmHg)	100 ℃ *Literature* .
Flash Point - Closed Cup	39 ℃ *Closed Cup*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air	**Lower**: No test data available

	Upper: No test data available
Vapor Pressure	No test data available
Vapor Density (air = 1)	1 *Estimated.*
Specific Gravity (H2O = 1)	0.98 *Calculated*
Solubility in water (by weight)	Soluble
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	No test data available
Explosive properties	no data available
Oxidizing properties	no data available

9.2 Other information

Section 10. Stability and Reactivity

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose.

10.5 Incompatible Materials: Avoid contact with oxidizing materials.

10.6 Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials.

Section 11. Toxicological Information

11.1 Information on toxicological effects
Acute Toxicity
Ingestion
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause central nervous system depression. May cause nausea and vomiting. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats.
The data presented are for the following material: Isopropyl alcohol. LD50, rat 4,700 - 5,800 mg/kg
The data presented are for the following material: Isopropyl alcohol. Estimated. Lethal Dose, Humans 100 ml

Aspiration hazard
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Dermal
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
The data presented are for the following material: Isopropyl alcohol. LD50, rabbit 13,000 mg/kg

Inhalation
In confined or poorly ventilated areas, vapor can readily accumulate and can cause unconsciousness and death. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels. Observations in animals include middle ear lining

damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown
The data presented are for the following material: Isopropyl alcohol. LC50, 4 h, Vapor, rat, female 28,500 ppm

Eye damage/eye irritation
May cause pain disproportionate to the level of irritation to eye tissues. May cause moderate eye irritation. May cause moderate corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness. Vapor may cause lacrimation (tears).

Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.

Sensitization
Skin
No relevant information found.
Respiratory
No relevant information found.

Repeated Dose Toxicity
Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Observations in animals include: Lethargy. Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Chronic Toxicity and Carcinogenicity
In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man. Contains component(s) which did not cause cancer in laboratory animals.

Developmental Toxicity
Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother. Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

Reproductive Toxicity
In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals. Contains component(s) which did not interfere with reproduction in animal studies.

Genetic Toxicology
Contains a component(s) which were negative in in vitro genetic toxicity studies. Contains component(s) which were negative in animal genetic toxicity studies.

Section 12. Ecological Information

12.1 Toxicity

Data for Component: **Propan-2-ol; isopropyl alcohol; isopropanol**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, Pimephales promelas (fathead minnow), flow-through test, 96 h: 9,640 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, Daphnia magna (Water flea), static test, 24 h, immobilization: > 1,000 mg/l
Aquatic Plant Toxicity
NOEC, alga Scenedesmus sp., static test, Growth inhibition (cell density reduction), 7 d: 1,800 mg/l
ErC50, alga Scenedesmus sp., static test, Growth rate inhibition, 72 h: > 1,000 mg/l
Toxicity to Micro-organisms
EC50; activated sludge: > 1,000 mg/l

Aquatic Invertebrates Chronic Toxicity Value
Daphnia magna (Water flea), semi-static test, 21 d, NOEC: 30 mg/l

Data for Component: **2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: 1,474 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 1,550 mg/l
Aquatic Plant Toxicity
EbC50, Pseudokirchneriella subcapitata (green algae), static test, biomass growth inhibition, 72 h: 911 mg/l
Toxicity to Micro-organisms
IC50; Bacteria: > 1,000 mg/l
Fish Chronic Toxicity Value (ChV)
Danio rerio (zebra fish), semi-static test, 21 d, NOEC:> 100 mg/l
Aquatic Invertebrates Chronic Toxicity Value
Daphnia magna (Water flea), semi-static test, 21 d, reproduction, NOEC: 100 mg/l

12.2 Persistence and Degradability

Data for Component: **Propan-2-ol; isopropyl alcohol; isopropanol**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
95 %	21 d	OECD 301E Test	pass
53 %	5 d	EU Method C.6 (Degradation: Chemical Oxygen Demand)	pass

Data for Component: **2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
90.4 %	28 d	OECD 301B Test	pass

12.3 Bioaccumulative potential

Data for Component: **Propan-2-ol; isopropyl alcohol; isopropanol**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 0.05 Measured

Data for Component: **2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 0.81 Measured

12.4 Mobility in soil

Data for Component: **Propan-2-ol; isopropyl alcohol; isopropanol**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 1.1 Estimated.
Henry's Law Constant (H): 3.38E-06 - 8.07E-06 atm*m3/mole; 25 °C Estimated.

Data for Component: **2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve**

Mobility in soil: Potential for mobility in soil is high (Koc between 50 and 150).
Partition coefficient, soil organic carbon/water (Koc): 67 Estimated.
Henry's Law Constant (H): 1.60E-06 atm*m3/mole Measured

12.5 Results of PBT and vPvB assessment

Data for Component: **Propan-2-ol; isopropyl alcohol; isopropanol**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Data for Component: **2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Data for Component: **Propan-2-ol; isopropyl alcohol; isopropanol**

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Data for Component: **2-Butoxyethanol; ethylene glycol monobutyl ether; butyl cellosolve**

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Section 13. Disposal Considerations

13.1 Waste treatment methods

Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. CONTAMINATED PACKAGING: Any disposal of contaminated packaging and washings must be in accordance with State, Territory and/or Local government regulations. After container has been cleaned and labelling has been removed, empty containers can be sent for recycling or disposal. If the container is to be reconditioned, the reconditioning company should be made aware of the nature of the original contents.

Section 14. Transport Information

ROAD & RAIL

NOT REGULATED

OCEAN

NOT REGULATED

AIR

NOT REGULATED

Environmental Hazard: No

INLAND WATERWAYS

NOT REGULATED

Section 15. Regulatory Information

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

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

15.2 Chemical Safety Assessment
Not applicable.

Section 16. Other Information

Hazard statement in the composition section

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.

Risk-phrases in the Composition section

R11	Highly flammable.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R36	Irritating to eyes.
R36/38	Irritating to eyes and skin.
R67	Vapours may cause drowsiness and dizziness.

Revision
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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.
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