SAFETY DATE SHEET

FILE NO.001

NAME OF PRODUCT

X Fog

MSDS DATE: 10/09/20

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifiers

Product name: X Fog

1.2. Other Means of Identification

Product synonyms: none

1.3. Recommended Uses/Restrictions to Use

Uses: Fogging solution

Restrictions: See product label for details

1.4. Supplier Details

Registered company name	X Way Sdn. Bhd.
Address	No. 31 Jalan P/118B, Desa Tun Razak, 56000 Kuala Lumpur, Malaysia
Telephone	+603 – 9174 7436 / 7468
Website	www.xway.com.my
Email	sales@xway.com.my

1.5. Emergency Contact

Emergency Phone #: +603 9174 7436 / 7468 or Call Bomba 994

SECTION 2: HAZARDS IDENTIFICATION

HAZARDS IDENTIFICATION

2.1 HEALTH HAZARD DATA

2.1.1 EFFECTS OF A SINGLE OVEREXPOSURE

Swallowing: May cause pain or discomfort in the abdomen, pain in the lumbar region, nausea, vomiting, diarrhea, dizziness, drowsiness, decreased urine production, malaise, and loss of consciousness. Severe kidney damage may occur which can be fatal if not promptly and adequately treated. Liver injury may also occur.

Skin absorption: No evidence of harmful effects from available information.

Inhalation: Short-term harmful health effects are not expected from vapor generated at ambient temperature. Vapor or mist from heated material may cause nausea and headache.

Skin contact: No evidence of harmful effects from available information.

Eye contact: May cause irritation, experienced as stinging with excess blinking and tear production. Excess redness of the conjunctive may occur

2.1.2 EFFECTS OF REPEATED OVEREXPOSURE

Repeated overexposure to vapor or mist may cause headache, nausea, and dizziness.

2.1.3 MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

2.1.4 OTHER EFFECTS OF OVEREXPOSURE

Short-term repeated ingestion of diethylene glycol may produce renal failure.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

3.2. Mixtures

Hazardous component(s) or components of note:

Chemical Identity	Contains (% by weight)	CAS-No.	Hazard Classification
Diethylene glycol	>=80.0	111-46-6	Harmful if swallowed
Ethylene glycol	0.2	107-21-1	Harmful if swallowed

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician or poison control center. Provide this safety data sheet to medical personnel. Move out of hazardous areas.

If inhaled

Move person to fresh air. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth to mouth if possible. Call a poison control center or doctor for further treatment advice.

In case of skin contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

In case of eye contact

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If swallowed

Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed, if necessary

No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media
Suitable extinguishing media: Use water spray, alcohol-resistant foam, all-purpose type foam, dry chemical, or carbon dioxide.

5.2. Special firefighting procedures
Do not direct a solid stream of water or foam into hot, burning pools: this may cause frothing and increase fire intensity.

5.3. Special protective equipment and precautions for fire fighters
Wear self-contained breathing apparatus for firefighting if deemed necessary.
Additional information: none.

5.4. Further information
Avoid release of material to environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment, and emergency procedures
Avoid contact with spilled product and contaminated surfaces. Evacuate personnel to safe areas during emergencies. For safe handling instructions see section 7. For proper PPE see section 8.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up
Wipe up any spilled material and dispose of according to instructions in section 13. Wash contaminated surfaces with soap and water.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Handle in accordance with good industrial hygiene practices. Wash hands thoroughly with soap and water after use and before eating, drinking, chewing gum, using tobacco, or using the toilet. For additional precautions see section 2.2

7.2. Conditions for safe storage, including any incompatibilities
Store in a cool dry place. Store in original container. Do not store where children or animals may gain access.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Diethylene glycol (CAS # 111-46-6)	50 ppm TWA-8hr, vapor and aerosol, AIHA WEEL 10 mg/m3 TWA-8hr, aerosol, AIHA WEEL
Ethylene glycol (CAS # 107-21-1)	100 mg/m3 Ceiling, Aerosol, ACGIH 125 mg/m3 Ceiling, OSHA-Vacated 50 pm Ceiling, OSHA-Vacated

8.2 PERSONAL PROTECTION

Respiratory protection

None expected to be needed at low temperatures.

Hand protection / protective gloves

Neoprene, Nitrile, Natural rubber, Butyl rubber, PVC-coated or Polyethylene

Eye protection

Monogoggles

Other protective equipment

Eye bath and safety shower.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance

Appearance;	Transparent colorless liquid
Odor;	Under normal conditions – No detectable odor under high vapor concentration, mild sweet odor may be detected
Odor threshold;	No data available
pH;	No data available
Melting point/freezing point;	-9.0 ºC (freezing point); No data available (melting point)
Boiling point;	245.3 ºC at 1013hPa
Flash point;	154.4 ºC METHOD: Pansky-Martens closed cup ASTM D 93 162.7 ºC METHOD: Cleveland open cup ASTM D 92
Evaporation rate (Butyl acetate=1);	<0.001
Flammability Limits;	LOWER: 2.0 (calculated)
Upper/lower flammability or explosive limits;	No data available
Vapor pressure;	0.0026 hPa at 20
Vapor density (air=1);	3.65
Molecular weight	106.12
In Air (% by volume)	UPPER: 12.3 (estimated)
Specific gravity (H2O=1)	1.08 at 25/25 ºC
Solubility in water (% by weight)	100 at 20 ºC
Percent Volatiles	None specified

9.2. Additional Information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 STABILITY

Stable.

Conditions to avoid

None known.

Incompatible materials

Explosive decomposition may occur if combined with strong acids or strong bases and subjected to elevated temperatures. Therefore, avoid strong acids and strong bases at elevated temperatures. Avoid contamination with strong oxidizing agents and materials reactive with hydroxyl compounds.

Hazardous combustion products

Burning ban produce the following combustion products:

Carbon monoxide and/or carbon dioxide.

Carbon monoxide is highly toxic if inhaled: carbon dioxide in sufficient concentrations can act as an asphyxiant. If the fluid is heated above the temperature of the onset of initial decomposition 287°C, thermal degradation may result in the formulation of volatile organic compounds such as aldehydes including formaldehyde and acetaldehyde and other potentially harmful decomposition products. Respiratory protection may be required.

Thermal decomposition

If the fluid is heated above the temperature of the onset of initial decomposition 240°C, thermal degradation may result in the formulation of potentially harmful volatile organic decomposition products. Respiratory protection may be required.

10.2 POLYMERIZATION

Will not occur.

Conditions to avoid

None known

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 ACUTE TOXICOLOGICAL INFORMATION

Acute oral toxicity

Rat: 32 ml/kg killed 5/5; 16 ml/kg killed 0/5

Major signs: sluggishness, piloerection, heavy breaming

Gross pathology: lungs, liver, kidneys discolored: intestines gas-filled

Acute percutaneous toxicity

Rabbit: 24 hr. occluded: LD50: 11.2 (5.28 – 23.9) ml/kg

Major signs: none

Gross pathology: lungs, liver, and kidneys discolored

Acute vapor exposure

Rat: dynamic generation of vapor at room temperature, 6hr exposure killed 0/5 males and 0/5 females

Major signs: none

Gross pathology: none Primary skin irritation

Rabbit, 4 hr. uncovered: no irritation

Sensitization No information available

Eye irritation Rabbit, 0.1 ml: minor conjunctival irritation, no corneal injury

11.2 OTHER TOXICOLOGICAL INFORMATION

A chronic dietary feeding study of diethylene glycol with rats showed mild kidney injury at 1% while concentration of 2% and 4% caused more marked kidney injury. In addition, at 2% and 4% if diethylene glycol in the diet, some rats developed benign papillary tumors in the urinary bladder. These have been attributed to the presence of urinary bladder calcium oxalate stones. No evidence for carcinogenicity was found with a chronic skin- painting study with diethylene glycol in mice. The absence of a direct chemical carcinogenic effect accords with the results in in-vitro genotoxicity studies which show that it does not produce mutagenic blastogenic effects. A feeding study employing up to 5.0% diethylene glycol in the diet failed to produce any teratogenic effects. In a mouse continuous breeding study with large doses of diethylene glycol in drinking water, there was evidence for reproductive toxicity at 3.5% (equivalent to 6.1 g/kg/day) as reduced number of liters, live pups per liter and live pup weight. No such effects were seen at 1.75% (approximately 3.05 g/kg/day). The relevance of these extremely high dosages to human health is uncertain. Pregnant rats receiving undiluted diethylene glycol by gavage over the period of organogenesis had toxic effect at 4.0 and 8.0 ml/kg/day as mortality, decreased body weight, decrease food consumption, increased water consumption and increased liver and kidney weights. Fetotoxicity was seen only at these maternally toxic dosages. Decreased total body weight occurred at 8.0 ml/kg/day and increase skeletal variants at 4.0 and 8.0 ml/kg/day. No embryotoxic or teratogenic effects were seen. Neither maternal toxicity nor fetotoxicity occurred at 1.0 ml/kg/day in a study with mice also receiving undiluted diethylene glycol over the period of organogenesis, maternal toxicity occurred at 2.5 and 10.0 ml/kg/day but not at 0.5 ml/kg/day. Definitive developmental toxicity was not seen in this species. An acute nose-only exposure (4hr) to a respirable aerosol (2.83-2.25 microns) of diethylene glycol at a mean concentration of 5.08 mg/l produced no signs of toxicity or irritancy.

11.3 ADDITIONAL INFORMATION

All available information with relevance to human health hazard evaluation is indicated under section 11.2.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity Estimate

Toxicity to fish	LC50 – Pimephales promelas (fathead minnow) - >10000mg/l – 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 – Daphnia magna (Water flea) – >10000 mg/l – 48 h

12.2. Persistence and degradability

Degradability

- Biodegradation (%) after 5 days: 4
- Biodegradation (%) after 10 days: 14
- Biodegradation (%) after 20 days: 53

Chemical oxygen demand (COD) (mg/mg): 1.50

THOD (mg/mg): 1.49

Accumulation

- Log P Oct/H2O: -1.98 calculated

12.3. Mobility in soil

No data available

12.4. Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Disposal Methods.

Incinerate in a furnace where permitted under national and local regulations. Dispose of in accordance with appropriate national and local regulations. Empty containers should be recycled or disposed of through an approved waste management facility. This product is resistant to rapid biodegradation, but it does degrade slowly. It should be feasible to dispose of small amounts by flushing to a wastewater treatment plant. For large amounts, incineration is the preferred method of disposal. Disposal method s identified are for the product as sold. For proper disposal of used materials, an assessment must be completed to determine the proper and permissible waste management options permissible under applicable rules, regulations and/or laws governing your location.

SECTION 14: TRANSPORT INFORMATION

ADR/RID

This product is not submitted to the ADR regulations. MONT-BLANC. OK

IMDG

This product is not submitted to the IMO regulations

MARPOL

ANNEX II: Category D

Cargo Name: Diethylene glycol

ANNEX II: Not classified

ICAO

This product is not submitted to the ICAO regulations

SECTION 15: REGULATORY INFORMATION

15.1 HAZARD CLASSIFICATION

DANGER SYMBOL (S)	Xn
RISK PHRASES	22
SAFETY PHRASES	24
LABEL TEXT	Harmful if swallowed Avoid contact with skin FOR INDUSTRIAL USE ONLY
CONTAINS	Diethylene glycol

15.2 REGULATORY DATA

All other national and local regulations, if applicable to the use, transport or disposal of this product should be observed.

15.3 CHEMICAL INVENTORY INFORMATION

EINECS

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

TSCA

All components of this product are on the TSCA inventory or are exempt from TSCA inventory requirement.

AICS

The components of this product are on the AICS inventory.

DSL

The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

SECTION 16: OTHER INFORMATION

RECOMMENDED USES AND RESTRICTIONS
For Industry Use Only FURTHER INFORMATION
Notice to Reader: The information provided in this Safety Data Sheet has been obtained from sources believed to be reliable. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are trademarks of X Way Sdn. Bhd.