LION
ready for action

USER MANUAL ENGLISH

SMOKEBOOST 1950



Original version

Version 1.0

1 may 2025

Colophon:

This documentation (original manual) is written in English by the manufacturer. LION Protects BV and is determinative over any translated version.

Address:
LION Protects BV
Rheastraat 14
5047 TL Tilburg
The Netherlands
infoEMEA@LIONprotects.com
0031-13 507-6800

LION TotalCare®
Rheastraat 14
5047 TL Tilburg
The Netherlands
ServiceEMEA@LIONprotects.com
0031-13 507-6824

WWW.LIONPROTECTS.COM

Without written permission from LION Protects BV No part of this publication may be reproduced for any purpose.

Document prepared in conformity with
ISO 21600:2019: Technical product documentation – General mechanical product digital manuals requirements.
NEN 5509:2016 : User Manual

Table of Contents

Chapter 1 General information **6**

Chapter 1 Introduction **5**

1.1 Icons and Safety Notes 5

Chapter 2 Introduction to SMOKEBOOST 1950 **6**

2.1 Product Overview 6

2.2 Visual overview 7

2.3 Brief description of the components 7

Chapter 3 Setup Instructions – Installation **8**

3.1 Installation. 8

3.2 Modification of the installation. 8

3.3 Mandatory / Non-mandatory training 9

3.4 Before operation. 9

3.5 Access, PPE, conditions 10

Chapter 4 Operation of the system **11**

4.1 Operating the system 11

4.2 Menu options description 12

4.3 Advanced functions: DMX connection 12

4.4 Usage of remote control 13

Chapter 5 Optional: Usage of the system with Other LION systems **14**

5.1 Industrial Remote Control 14

5.2 Pairing an ATTACK™ or a BullsEye™ 15

Chapter 6 Safety Instructions **16**

Chapter 7 Maintenance **18**

7.1 Regular care 18

7.2 Contacting Support 18

Chapter 8 Transport / Storage **19**

8.1 Transport 19

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

8.2 Storage 19

Chapter 9 Warranty Information 20

9.1 Warranty duration and startup date. 20

9.2 Limits to the warranty. 20

9.3 Warranty extension. 21

9.4 Warranty replacement/service. 21

Appendix A) MSDS Smoke liquid extract 22

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 1 Introduction

The present document is a user manual describing the elements installed by LION in the SMOKEBOOST 1950 and their operations. It presents the correct and safe operation of the system and, if applicable, further information on transport, installation, and maintenance.

The target audiences of this manual are training facility instructors, service and maintenance personnel, operations management and safety personnel.

Authorized personnel from LION Protects BV only is allowed to provide training for the training facility instructors and the service and maintenance personnel.

In case of doubt, or if retraining is required, please contact LION TotalCare: ServiceEMEA@LIONprotects.com.

1.1 Icons and Safety Notes

Safety notes provide additional information or warn the reader about safety risks. They always have an icon, a keyword, and a text.

Depending on the type of safety note and its content, a corresponding icon and keyword are chosen. The text provides additional information, including the danger, potential consequences, and preventive actions in case of a safety risk.

The following types of safety notes are used in this user manual:

NOTICE	Safety instructions with this symbol and keyword refer to additional information or best practices.
CAUTION	Safety instructions with this symbol and keyword refer to instructions that warn of possible minor damage and/or injury.
WARNING	Safety instructions with this symbol and keyword refer to instructions that warn of possible severe damage and/or injury, including the possibility of death.
DANGER	Safety instructions with this symbol and keyword refer to instructions that warn of severe damage and/or injury, including death.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 2 Introduction to SMOKEBOOST 1950

2.1 Product Overview

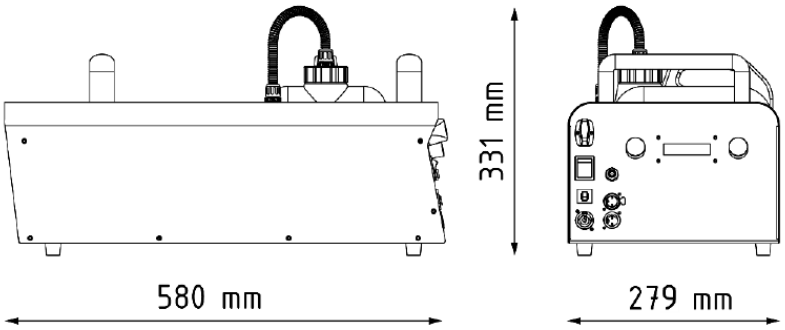
2.1.1 Product description

The SMOKEBOOST 1950 is designed to produce artificial smoke by vaporizing smoke liquid. The vaporization process has been optimized specifically for LION smoke liquid. Using a different smoke liquid may harm the smoke generator or cause the release of hazardous fumes.

Using an alternative smoke liquid will render the warranty immediately void.

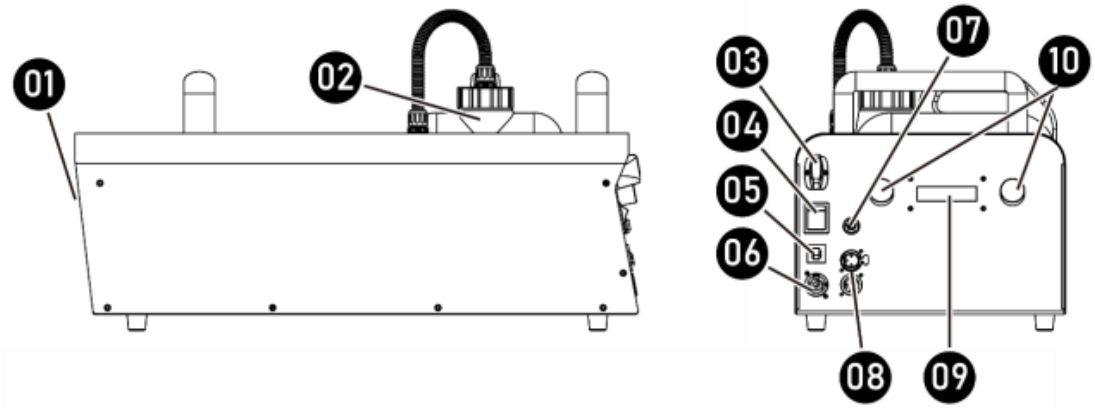
2.1.2 Technical information.

Input Voltage	EU Model: AC 220-240V, 50/60Hz 6.5A
Rated Power	240V 1450W
Warming-up Time	8.5 minutes (approx.)
Fluid Consumption	100 ml/min (100% output)
Fluid Tank Capacity	6 Liters (1.59 Gallons)
Compatible Fluid	LION Smoke liquid
Ambient Temp. Range	0°C – 40°C (32°F – 104°F)
Control Methods	Manual, Timer, DMX512, Wireless Remote (Optional)
Interface	XLR 5-Pin Connector (DMX), Neutrik powerCON Connector (Power)
DMX Channels	1 Channel
Dimension	L 580 W 279 H 331 mm (L 22.83 W 10.99 H 13.03 inch)
Weight	14.6 kg (32.19 lbs.)



LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

2.2 Visual overview



2.3 Brief description of the components

01. Nozzle	06. Power cable connector
02. 6 Liter Fluid Tank	07. Unused
03. Wireless Receiver	08. XLR 5-Pin Connector (DMX)
04. Power Switch	09. LCD Display
05. Breaker	10. Rotary Knob

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 3 Setup Instructions – Installation

3.1 Installation.

Step 1. Place the smoke generator on a flat, leveled, hard and well-ventilated surface area, reserve at least 50cm of open space around the machine, and ensure no flammable gas or material is nearby.

Step 2. Fill the smoke liquid tank with LION-approved smoke liquid, and make sure the tube is not twisted.

Step 3. Connect the smoke generator to the power outlet. Please read the technical label on the back of the smoke generator and ensure the power outlet corresponds to the rated voltage for the smoke generator.

Step 4. Turn on the smoke generator. The warm-up process takes approximately 8.5 minutes. Once the smoke generator has reached operating temperature, the LCD display will show "Ready To Fog." Now, the smoke generator is ready for operation.

3.2 Modification of the installation.

DANGER

Any installation modification without prior formal approval from LION is strictly forbidden.

If any modifications are made to the installation without LION's formal approval, the user is entirely responsible for all risks and consequences of problems, and LION will bear no responsibility for any personal or material damages.

Any modification or use of the system contrary to the rules and guidelines in the present manual will void the warranty.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

3.3 Mandatory / Non-mandatory training

SAFETY INFORMATION

This product does not require mandatory training to be operated safely.

If you want to be trained, please contact LION TotalCare:
serviceEMEA@LIONprotects.com

3.4 Before operation.

3.4.1 Checks

Verify that the smoke generator is plugged into the correct power plug.

Verify that the smoke generator presents a correct look and feel and does not present visible damage before turning the smoke generator on.

3.4.2 Setup before usage

Refer to chapter 3.1

Make sure that

- The smoke generator is filled with the LION smoke liquid.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

3.5 Access, PPE, conditions

3.5.1 Mandatory Personal Protective Equipment, PPE

SAFETY INFORMATION

This simulator is generating artificial smoke. Though the smoke does not present immediate danger to health, it is strongly recommended to use a filter mask A1/P2 when training involves high concentrations or continuous exposure.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 4 Operation of the system

The SB1950 can be operated in the following modes. The smoke generator can only accept 1 type of signal at a time. When using different control modes at the same time, the smoke generator will work according to the built-in control priority as follows:

- Manual
- Timer
- DMX512
- Wireless (option)

4.1 Operating the system

[TIMER] knob Middle is LCD Display [VOLUME] knob



Fogging when using Timer Mode

Rotary Knob	Operating Method	Action
TIMER knob (Left)	Press Once	Activate Timer Mode
VOLUME knob (Right)	Press Once	Deactivate Timer Mode
VOLUME knob (Right)	Rotate	Adjust Output Volume

Fogging when using Volume Mode

Rotary Knob	Operating Method	Action
VOLUME knob (Right)	Press Once	Activate Volume Mode
VOLUME knob (Right)	Press Once	Deactivate Volume Mode
VOLUME knob (Right)	Rotate	Adjust Output Volume

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Menu and Settings

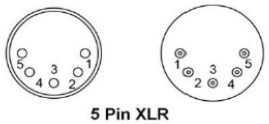
Rotary Knob	Operating Method	Action
TIMER knob (Left)	Press and Hold for 3 seconds	Activate Volume Mode
TIMER knob (Left)	Rotate	Scroll Through Menu
TIMER knob (Left)	Press Once	Enter/confirm Selection
TIMER knob (Left)	Rotate	Adjust for the preferred value
VOLUME knob (Right)	Press Once	Return to previous page

4.2 Menu options description

Timer Interval xxx S	Set Interval Time from 5-200 sec
Timer Duration xxx S	Set Duration Time from 1-200 sec
Timer Output xxx%	Set Output Volume from 1-100%
Volume Output xxx%	Set Output Volume from 1-100%
DMX512 Address: XX	Set DMX Address from 001-512
Wireless ON	Turn ON/OFF Wireless Function
Fluid Sensor Set ON	Turn ON/OFF Fluid Sensor
W-DMX Power	Turn ON/OFF W-DMX Function
Run Last Setting OFF	Turn ON/OFF Memory Mode (Turn ON, the smoke generator will remember the last setting)
Keypad Sound	Turn ON/OFF Rotary Knob Sound
Wireless Detect Pair	Pair or Unpair Wireless Remote
Nonstop Burst OFF	Turn ON/OFF Nonstop Burst Function (Turn ON, continuous fogging nonstop)

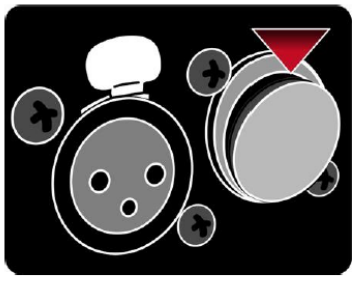
4.3 Advanced functions: DMX connection

This machine has an XLR 5-Pin connector for DMX connection. The diagram below indicates pin assignment information.



Pin	Function
1	Ground
2	Data-
3	Data+
4	N/A
5	N/A

**There is a protection cap on DMX IN, please remove it with your finger before operation.



1 Channel Mode		DMX Value Range	Function
Channel 1	Fog Output Level	0 – 4	Off
		5 – 255	1 – 100%

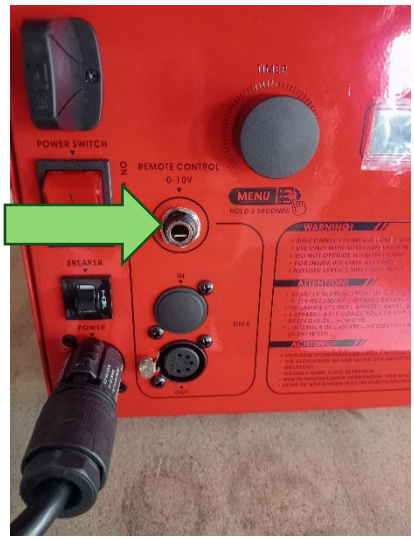
LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

4.4 Usage of remote control

A small remote control is provided to be able to have limited control capacities of the smoke generator from distance.



To operate the remote control, a receiver should be prior to operation connected to the smoke generator. To do so connect the receiver into the remote control plug in the back of the smoke generator. The receiver is equipped with a magnet and can be sticked to the smoke generator, as presented on the picture below (right).





To operate and get smoke press either of the button, and keep it pressed, this will generate smoke, so long the button is pressed. When the button is released the production of smoke is stopped.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 5 Optional: Usage of the system with Other LION systems

The SB1950 can be operated in conjunction with other LION systems. Those systems are optional but enable a greater training experience.

5.1 Industrial Remote Control



Industrial remote control

The industrial remote control can control much more than the smoke generator. But it can also control the Smoke Generator SB1950.

The remote control's user manual can help you better understand. Underneath is just a quick guide on how to connect the remote.

1- Start the smoke generator,
2- Wait approximately 3 minutes for the smoke generator to establish the network.
3- Start the remote control
4- It should pair itself with the smoke generator; if not, press the pairing button. On the bottom left corner until it vibrates. (Attention: pressing the button many times will unpair it.)



5- Press the smoke button to generate smoke.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

5.2 Pairing an ATTACK™ or a BullsEye™



BullsEye™ Digital Fire Simulation Panel



ATTACK™ Digital Fire Training Panel

The SB1950 can be connected and automatically react to extinguishing performed on the BullsEye™ and/or ATTACK™ systems.

For more information, refer to the BullsEye™ or ATTACK™ user manual. Underneath is just a quick guide on how to connect the BullsEye™ or ATTACK™.

1- Start the ATTACK™ or BullsEye™,
2- Wait approximately 3 minutes for the BullsEye™ or ATTACK™ to establish the network.
3- Start the SB1950
4- It will pair itself automatically with the ATTACK™ and the BullsEye™ after 1 or 2 minutes.
5- It is then possible to control the smoke generator with the remote of the BullsEye™ or ATTACK™.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 6 Safety Instructions

DANGER

- You must connect the smoke generator to the correct rated voltage, or it might lead to an electrical shock or a burn and may cause serious consequences.
- To avoid the risk of electrocution, the smoke generator must be connected to a protected circuit and properly grounded.
- Do not operate the smoke generator with a bundled power cord; it could lead to a fire hazard.
- When operating the smoke generator, do not point at people, animals, or fire.

WARNING

- The smoke generator's nozzle is extremely hot; please keep at least 50cm from the nozzle when the smoke generator is running.
- Please operate the smoke generator on a flat, leveled, hard and well-ventilated surface area, reserve at least 50cm space around the smoke generator and make sure there is no flammable gas or material nearby.
- Do not disassemble, repair or modify the machine; it may cause damage, malfunction, electrical shock risk, or fire.
- The smoke generator can only be operated by adults or professionals, and is not intended for use by persons with reduced physical sensory, mental capabilities, or lack of experience and knowledge, including children.
- Do not leave the smoke generator unattended; ensure all powers are off when leaving.
- Children should be supervised to ensure they do not play with the smoke generator.
- Do not use the smoke generator upside down or tilt it; it might cause damage or malfunction.
- Please store the fluid in a well-ventilated area without direct sunlight and keep it out of reach of children. If you make eye contact or accidentally swallow the liquid, please seek medical attention immediately. Refer to the MSDS Appendix.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

CAUTION

- Keep the smoke generator at all times. The smoke generator is not waterproof; do not expose the smoke generator to water, rain, or a moisture environment.
- Please ensure the power outlet is not damaged or loose before plugging the power cord.
- If the power cord is damaged, it must be replaced by LION or its local dealers; otherwise, the warranty will be void.
- Before operating the smoke generator, make sure the smoke liquid is filled in the tank to prevent the pump from idling, which could cause overheating or damage..
- Before transporting the smoke generator, please ensure the smoke liquid is drained and the tank is empty. (Recommend using the original package.)
- Do not operate the smoke generator in any area with unstable voltage.
- If you experience a strange sound or malfunction, immediately turn off the power and unplug the power cord. Then, contact your local LION dealer for assistance.
- Only use accessories recommended or sold by LION.
- Please turn off the power when not using the smoke generator and unplug the power cord if you do not intend to use it for an extended period.
- To disconnect, turn all controls to the off position, then remove the plug from the outlet.
- Do not unplug by pulling on the cord. To unplug, grasp the plug, not the cord.
- Unplug from the outlet before servicing or cleaning.
- Do not operate the smoke generator with a damaged cord or plug or after its normal functions are dropped or damaged in any manner. Return the smoke generator to the nearest authorized service facility for examination, repair, or electrical or mechanical adjustment.
- To ensure the smoke generator's lifespan, please only use the LION smoke liquid; do not use other fluids or additives; otherwise, they may clog the heater and cause malfunction.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 7 Maintenance

DANGER

Disconnect the power cord before starting the maintenance operation!

7.1 Regular care

NOTICE

- Always keep the smoke generator clean and dry.
- Can use an air compressor, vacuum or a soft brush to remove the dust on the machine.
- Can use a slightly damp cloth to clean the casing.
- Before storing the smoke generator, ensure it is fully cooled to prevent moisture buildup, which could cause malfunction.
- It is recommended that the smoke generator be run at least once a month to maintain its best performance and output condition.
- Excessive dust and buildup of smoke liquid residue will reduce the performance and cause overheating.

WARNING

Failure to perform regular care can damage the system or cause injuries. In those cases, the customer is responsible, which can void the warranty.

7.2 Contacting Support

If you encounter any issues that are not covered in this manual, please contact our customer support team at :

- Email: ServiceEMEA@lionprotects.com
- Telephone number (General): +31 13 507 6800
- Telephone number (Service department): +31 13 507 6824

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 8 Transport / Storage

8.1 Transport

Before moving the machine, ensure the smoke generator is shut down and cold. Empty the smoke liquid tank. If possible, place the smoke generator in the original box and ensure it is tightened fast to avoid shocks during transport.

8.2 Storage

Keep the smoke generator dry and clean for extended storage periods.

Start the smoke generator once a month to keep it in good condition.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Chapter 9 Warranty Information

Necessary: The warranty does not include required regular service actions. Those costs are due as part of the service. Failure to follow the maintenance schedule might render the warranty void.

9.1 Warranty duration and startup date.

LION guarantees all goods supplied under the contract and services for 12 months after delivery of the goods and/or services. Delivery of goods means :

- The date of shipment from the factory for goods sold under Ex. Works (INCOTERMS 2020) conditions.
- The date of signature of the SAT documents for installations commissioned by LION.

NOTICE

Operating the goods by the customer before the signature of the SAT has the following consequences:

- Immediate acceptance of the goods and renunciation of potential claims linked to the completion of the delivery by the user.
- Voiding the warranty.

9.2 Limits to the warranty.

The warranty covers system failure under normal usage of the simulator, following the user manual.

Failure to accomplish the maintenance described in the maintenance chapter renders the warranty void.

Tampering with the system renders the warranty void.

Damage or malfunctions resulting from normal wear and improper use are excluded.

All subsequent damages are also excluded. A detailed description of the warranty conditions is available upon request.

For more information about the applicability of the warranty, please refer to the general terms and conditions.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

9.3 Warranty extension.

LION can provide an extended warranty. Please contact your sales representative for more details.

9.4 Warranty replacement/service.

For all delivered equipment, goods, and installations, we would like to make you aware of our terms of delivery:

- LION Protects BV will replace any part that fails due to material or construction faults. Claims covered by warranty are only accepted during the warranty period.
- LION Protects BV cannot be held liable for damage to third parties or installations that fail due to a lack of maintenance or necessary repairs.
- If a third party changes or modifies the installation in any way without permission from LION Protects BV, the warranty is immediately voided, and LION Protects BV cannot be held liable for the following damages or injuries.

LION Protects BV cannot be held liable for damage if the system:

- is used without following the instructions;
- has failed because of a lack of maintenance;
- has failed because the prescribed maintenance intervals were not followed.

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Appendix A) MSDS Smoke liquid extract

The following pages present an extract of the Safety Data Sheet for LION's smoke liquid. For the full version, please contact LION TotalCare.

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SMOKE LIQUID

Version 1.0 Print Date 21.08.2023

Revision date / valid from 21.08.2023

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name	:	SMOKE LIQUID
REACH Status	:	Each component of the product is either registered or exempted from registration obligations according to REACH Regulation (EC) No 1907/2006

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

Use of the Substance/Mixture	:	steam/ smoke generator/ machine
Uses advised against	:	At this moment we have not identified any uses advised against

1.3. Details of the supplier of the safety data sheet

Company	:	LION protects B.V. Rheastraat 14 5047TL, Tilburg, The Netherlands
Telephone	:	+31 (0)13 507 6800
Telefax		
E-mail address	:	infoEMEA@lionprotects.com
Responsible/issuing person	:	Product Management Department

1.4. Emergency telephone number

Emergency telephone number	:	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

600000008188 1/21 EN

Classification according to Regulation (EC) No 1272/2008

The product is not classified as dangerous according to Regulation (EC) No. 1272/2008.

Most important adverse effects

Human Health	:	See section 11 for toxicological information.
Physical and chemical hazards	:	See section 9/10 for physicochemical information.
Potential environmental effects	:	See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is not labeled as dangerous according to Regulation (EC) No. 1272/2008.

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Remarks : No dangerous ingredients according to Regulation (EC) No. 1907/2006

Non-hazardous component

Chemical name	Identification Number	Amount [%]

2,2'-(Ethylenedioxy)diethanol	CAS-No. EC-No. REACH-Reg. No.	: 	112-27-6 203-953-2 01-2119438366-35-xxxx
Propane-1,2-diol	CAS-No. EC-No. REACH-Reg. No.	: 	57-55-6 200-338-0 01-2119456809-23-xxxx

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	: No special precautions required.
If inhaled	: Remove to fresh air. If symptoms persist, call a physician.
In case of skin contact	: Wash off with soap and water. If skin irritation persists, call a physician.
In case of eye contact	: Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.
If swallowed	: Rinse mouth with water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Protection of First Aid Responders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing.

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

Symptoms	: See Section 11 for more detailed information on health effects and symptoms.
Effects	: Health injuries are not known or expected under normal use. See Section 11 for more detailed information on health effects and symptoms.

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

Treatment	: Treat symptomatically.For specialist advice physicians should contact the Poisons Information Service.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Incomplete combustion may form toxic pyrolysis products.
Hazardous combustion products	:	Carbon monoxide, Carbon dioxide (CO2)

5.3. Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.Choose protective equipment according to size of fire.
Further advice	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	:	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Keep in suitable, closed containers for disposal.
	:	Use mechanical handling equipment. Keep in suitable, closed containers for disposal.
Further information	:	Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Keep container tightly closed. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice.
Hygiene measures	:	Keep away from food, drink and animal feedingstuffs. Smoking,

eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in original container.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Further information on storage conditions	:	Keep tightly closed in a dry and cool place.
Advice on common storage	:	Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

Specific use(s)	:	No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Other Occupational Exposure Limit Values

(Additional) Information	:	Contains no substances with occupational exposure limit values.

Contains no substances with occupational exposure limit values.

Component:	2,2'-(Ethylenedioxy)diethanol	CAS-No. 112-27-6

Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL Workers, Long-term - local effects, Inhalation	:	50 mg/m3
DNEL Workers, Long-term - systemic effects, Skin contact	:	40 mg/kg bw/day
DNEL Consumers, Long-term - local effects, Inhalation	:	25 mg/m3
DNEL Consumers, Long-term - systemic effects, Skin contact	:	20 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Fresh water	:	10 mg/l
Marine water	:	1 mg/l
Intermittent releases	:	10 mg/l
Sewage treatment plant (STP)	:	10 mg/l
Fresh water sediment	:	46 mg/kg d.w.
Soil	:	3,32 mg/kg d.w.

Component:	Propane-1,2-diol	CAS-No. 57-55-6

Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL Workers, Long-term - systemic effects, Inhalation	:	168 mg/m3
DNEL Workers, Long-term - local effects, Inhalation	:	10 mg/m3
DNEL Consumers, Long-term - systemic effects, Skin contact	:	213 mg/kg bw/day
DNEL Consumers, Long-term - systemic effects, Inhalation	:	50 mg/m3
DNEL Consumers, Long-term - systemic effects, Ingestion	:	85 mg/kg bw/day
DNEL Consumers, Long-term - local effects, Inhalation	:	10 mg/m3

Predicted No Effect Concentration (PNEC)

Fresh water	:	260 mg/l
Marine water	:	26 mg/l
Intermittent releases extrapolated	:	183 mg/l
Fresh water sediment	:	572 mg/kg d.w.
Marine sediment	:	57,2 mg/kg d.w.
Soil	:	50 mg/kg d.w.
Sewage treatment plant (STP) extrapolated	:	2000 mg/l

LION Protects BV | Rheastraat 14 | 5017TL Tilburg | The Netherlands | +31 (0)13 5076800
WWW.LIONPROTECTS.COM

Secondary poisoning extrapolated	:	1133 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

Advice	:	Required, if exposure limit is exceeded (e.g. OEL). Respiratory protection complying with EN 141.

Hand protection

Advice	:	Protective gloves complying with EN 374. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Protective gloves should be replaced at first signs of wear.
Material	:	Nitrile rubber
Break through time	:	> 480 min
Glove thickness	:	0,35 mm

Eye protection

Advice	:	Safety goggles

Skin and body protection

Advice	:	Protective work clothing

Environmental exposure controls

General advice	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.



LION

North America | South America
7200 Poe Avenue, Suite 4000
Dayton, OH 45414, U.S.A.
info@LIONprotects.com
800-548-6614 (PPE)
888-428-5539 (Training)

Europe | Middle East | Asia
Rheastraat 14, 5047 TL Tilburg,
The Netherlands
infoEMEA@LIONprotects.com
0031-13 507-6800

WWW.LIONPROTECTS.COM

© LION Group, Inc. All rights reserved.