



# MATERIAL SAFETY DATA SHEET

Revision Date: 12/09/2013  
Date Issued: 12/09/2013

## NERVION AF-1400

### I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

TRADE NAME: NERVION AF-1400  
PRODUCT CLASS: CHLORINATED SOLVENT  
CHEMICAL FAMILY: DICHLOROMETHANE MIXTURE  
HEALTH: WARNING

#### INFORMATION ON

MANUFACTURER/SUPPLIER: EL NERVION S.A DE C.V.  
ALDAMA # 5, SAN. JERÓNIMO TEPETLACALCO,  
TLALNEPANTLA, EDO. MÉXICO, 54090  
MÉXICO  
TELEPHONE: +52(55) 5361-0207  
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### II. COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	COMPONENTS	CAS NUMBER	CONCENTRATION [%]
01	CHLORINATED METHYLENE	75-09-2	89.1
02	ETHYL ESTER	141-78-6	9.80
03	AMMONIUM HYDROXIDE	1336-21-6	1.1

### III. HAZARDS IDENTIFICATION

#### Emergency Overview

#### **Physical Appearance**

Form: Viscous liquid  
Colour: Yellow  
Odour: Ammoniacal strong  
Water solubility: Partial  
pH: 10.0 - 12.0

**EXPOSURE EFFECTS:** Flammable. Could be released gases / toxic fumes during combustion and / or thermal decomposition. A closed container can explode with extreme heat. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Vapors or mist may pose a risk of fire and explosion if exposed to high heat or ignition. Vapors can travel to areas outside the workplace before lighting / back to vapor source. Ground containers and equipment before making the transfer to avoid static sparks. Has been associated with prolonged and repeated occupational overexposure to solvents with brain damage and nervous system permanently. Intentional misuse by deliberately concentrating or inhaling solvents may be harmful or fatal. Cause respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory



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sensitizer. The damage to the lungs and respiratory sensitization may be permanent. Cause skin irritation. May cause allergic skin reaction.

#### Potential health effects

**OVER-EXPOSURE (prolonged or repeated use): CAN AGGRAVATE OR ACCENTUATE ANY OF THESE EFFECTS.**

**SKIN CONTACT:** Irritating. This product is a skin irritant. May be absorbed through the skin. May cause irritation, burns, blisters, tissue destruction, drying and dry skin and dermatitis. It can cause symptoms caused by inhalation. Vapors and mist may irritate the skin moist.

**INHALATION:** Irritant. Vapor harmful. Dizziness, headache, watery eyes, mucous membrane lesions, sore throat and respiratory tract, nausea, numbness in fingers, arms and legs, bronchospasm, flushing, tissue damage, stained vision, dilated pupils, increased carboxyhemoglobin levels, which can cause stress to the cardiovascular system, arm, leg and chest pain, central nervous system depression, bronchitis, pulmonary edema, chemical pneumonitis, difficulty breathing, vomiting, visual disturbances, dizziness, intoxication, drowsiness, cough and dyspnea, cold, wet, limbs and diarrhea. Excessive exposure can cause rapid or irregular heartbeat, seizures, loss of consciousness and death. Elevated carboxyhemoglobin levels may be additive to the increase caused by smoking and other sources of carbon monoxide.

**EYES CONTACT:** Irritant. This material is an eye irritant. May cause irritation and pain, eye conjunctivitis, corneal ulceration of the eye, burns and blindness. Vapors and mist may irritate the eyes.

**INGESTION:** Harmful if swallowed-poison. May be fatal or cause blindness. May cause irritation to mouth, throat and stomach, headache, nausea, dizziness, stupor, liver damage, kidney and heart, central nervous system depression, narcosis, heartburn, esophagus, stomach, mouth and throat, vomiting, gastrointestinal irritation, diarrhea, abdominal pain, collapse, and death. May be corrosive to the mouth and throat. May produce symptoms caused by inhalation. Fluid aspiration into the lungs may cause chemical pneumonitis and systemic effects.

**MEDICAL CONDITIONS AGGRAVATED:** Reports have associated repeated and prolonged overexposure to solvents with neurological and physiological damage. Prolonged or repeated contact may cause dermatitis. Prolonged contact with skin may result in absorption of harmful quantities of this material. May cause headache, conjunctivitis, gastric disorders, skin irritation, changes in permanent central nervous system, decreased response to visual and auditory stimulation, visual impairment or blindness, hallucinations, changes in blood disorders blood, kidney damage, liver or pancreas, insomnia, vertigo, and death. May cause additional symptoms listed in inhalation. May cause dermatitis and deliberately prolonged exposure may cause central nervous system effects, liver and kidneys.

**PRIMARY ROUTE(S) OF ENTRY:** SKIN CONTACT, INHALATION, CONTACT, INGESTION, EYES.



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### IV. FIRST AID MEASURES

#### GENERAL ADVICE

Consult a physician. If breathing has stopped or is labored, give assisted respiration. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

#### Inhalation

If inhalation of mist or spray, take the affected person and take it to a cool place immediately. Appearance of any inconvenience that include severe irritation of the mucus lining (nose, throat and eyes), sneezing, coughing and tears flow. In case of persistent discomfort, seek medical attention immediately. If breathing has stopped or is labored give assisted respirations, supplemental oxygen may be indicated. If the heart has stopped trained personnel should begin cardiopulmonary resuscitation immediately, move to a place with fresh air. Keep the person warm and at rest.

#### Skin contact

Immediately remove contaminated clothing, and any chemical odd if possible to do so without delay. Wash immediately with plenty of soap and water for at least 20 minutes. Cover wound with sterile gauze. Remove contaminated clothing and shoes.

#### Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, or if necessary with an eyewash solution. If you have persistent discomfort, consult an ophthalmologist.

#### Ingestion

Aspiration hazard is swallowed - can enter lungs and cause damage - never giving a drink to an unconscious person. Malaise if medical attention immediately. **NOT induce vomiting.** If the person vomits and is lying on her back, will be placed in the recovery position, prevent aspiration of vomit, turn the head of the victim to a side.

#### Note to physician

Poison. This product contains methylene chloride and methanol.

This product contains methanol which can cause intoxication and central nervous system depression. The methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances and blindness. Since it requires the metabolism of these toxic symptoms may be delayed appearance of 6 to 30 hours after ingestion. Ethanol competes for the same metabolic pathway and has been used to prevent the metabolism of methanol. Ethanol administration is indicated for symptomatic patients or blood methanol concentrations above 20 ug/dl. The methanol is removed effectively by dialysis. Adrenalin should never be given to a person overexposed to methylene chloride.

Methylene chloride is an aspiration hazard. Risk of aspiration must be weighed against possible toxicity of the material to determine whether to induce emesis or gastric



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lavage. This material sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. This material is metabolized to carbon monoxide. Therefore, elevations in carboxyhemoglobin been reported as high as 50%, and levels may continue to increase for several hours after exposure has ceased. The experimental animal data suggest that there is a narrow margin between the concentrations causing anesthesia and death.

### V. FIRE-FIGHTING MEASURES

FLASH POINT:	not determined
LOWER EXPLOSIVE LIMIT:	12.0 %
UPPER EXPLOSIVE LIMIT:	19.0 %
AUTOIGNITION TEMPERATURE:	556 °C
FLAMMABILITY-OSHA:	Not considered to be flammable. This material is classified as hazardous under the OSHA regulations.

**SUITABLE EXTINGUISHING MEDIA:** alcohol-resistant foam, carbon dioxide, dry chemical, water fog (water spray for large fires), dry sand, limestone powder.

**SPECIFIC HAZARDS DURING FIRE FIGHTING:** In case of fire cool endangered containers with water. Closed container may rupture if strongly heated. Flammable liquid. Vapors may reach an ignition source and flash back. Explosive mixtures may form at temperatures at or above the flash point. The risk that personnel is downwind be evacuated.

**EXTINGUISHING MEDIA WHICH MUST NOT BE USED FOR SAFETY REASONS:** Not applicable.

**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:** As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Incomplete combustion may produce carbon monoxide, carbon dioxide, toxic gases or fumes.

**OSHA FLAMMABLE CLASS:** Not considered to be flammable. Vapor may form an explosive mixture with air.

### VI. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Ventilate area, remove sources of spark or flame, and remove with inert absorbent.



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### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

- **SMALL SPILL:** ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.
- **LARGE SPILL:** ELIMINATE ALL IGNITION SOURCES. PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID WAY BE TAKEN UP ON SAND CLAY, EARTH, FLOOR ABSORBENT AND SHOVEL INTO CONTAINERS. PREVENT RUN-OFF TO SEWERS, STREAMS OR OTHER, BODIES OF WATER. IF RUN-OFF OCCURS, NOTIFY PROPER AUTHORITIES AS REQUIRED THAT A SPILL HAS OCCURRED.

### WASTE DISPOSAL METHOD:

- **SMALL SPILL:** ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPOURS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.
- **LARGE SPILLS:** DESTROY BY LIQUID INCINERATION. CONTAMINATED ABSORBENT WAY DEPOSITED IN LANDFILL IN ACCORDANCE WITH LOCAL STATE AND FEDERAL REGULATIONS.

## VII. HANDLING AND STORAGE

### HANDLING

#### General Procedures Handling

Advice on Safe Handling: Wear respiratory protection when spraying.  
Ensure adequate ventilation.  
Use only in well-ventilated areas. Avoid breathing vapors and/or aerosols. Avoid contact whit skin and eyes. Emergency showers and eyed wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use personal protective equipment. When using, DO NO EAT, DRINK OR SMOKE.

Advice on protection against fire and explosion: Take precautionary measures against static charges; keep away from sources of ignition.

### STORAGE

#### Requirements for storage areas and containers

Keep containers tightly closed in a cool, dry, well ventilated place at temperatures not exceeding 120.19°F (49°C), keep away from open flames, sparks and heat sources. Keep container closed when not in use.

### SHELF LIFE

12 months @ 77 °F (25 °C): After the date of manufacture.



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### Further Information

Keep tightly sealed in original packing, do not store in reactive metal containers

## VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering measures

Provide for good ventilation if vapors/aerosol is formed.  
Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

### Personal protective equipment

**General protective measures:** Avoid contact with eyes and skin.

**Hygiene measures:** No smoking, eating or drinking allowed when using this product. Wash hands before breaks and at end of work shift or using the toilet.

**Respiratory protection:** Wear appropriate respirator when ventilation is inadequate. In case of formation of vapors/aerosols: equipment respiratory protection, vapor cartridges ammonia.

**Hand protection:** Butyl rubber gloves.  
The breakthrough time of the selected glove(s) must be greater than the intended use period.

**Eye protection:** Chemical resistant goggles must be worn.

**Protective clothing:** Light protective clothing is required.

## IX. PHYSICAL AND CHEMICAL PROPERTIES

**Form:** Viscous liquid  
**Colour:** Beige  
**Odour:** Characteristic ammonia  
**Water solubility:** Partial  
**pH:** 10 - 12  
**Melting temperature:** Not determined  
**Boiling temperature:** 109.94 °F (43.3 °C)  
**Vapour pressure:** 42.7 kPa (320 mm Hg at 20 °C)  
**Flash point:** > 212 °F (100 °C)  
**Density:** 1.1100 - 1.1700 g/cm<sup>3</sup>  
**Viscosity:** > 2,000 cPs

## X. STABILITY AND REACTIVITY



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<b>Thermal decomposition:</b>	Not determined
<b>Hazardous reactions:</b>	No hazardous reactions known if handled and stores the Material properly.
<b>Hazardous polymerization:</b>	Not
<b>Stability:</b>	This product is stable under normal storage conditions.
<b>Hazardous decomposition products:</b>	(BY FIRE, BURNING OR WELDING): Carbon dioxide (CO <sub>2</sub> ), carbon monoxide (CO), hydrochloric acid (HCl), chlorine and phosgene gas.
<b>Materials to avoid:</b>	Oxidizing agents, strong alkalis and corrosive.
<b>Conditions to avoid:</b>	Heat, open flame, electric arc and sparks.

## XI. TOXICOLOGICAL INFORMATION

Acute toxicity  
Methylene chloride Oral LD50 / Rat: 2,136 mg/Kg

## XII. ECOLOGICAL INFORMATION

**Environmental effects:** No know significant effects or critical hazards.

### **Aquatic ecotoxicity**

Methylene Chloride acute LC50: 224 mg/L Daphnia / 4 hours.

### **ACUTE TOXICITY:**

Rat inhalation LC50 52 mg/L 4 hours

Rat oral LD50 985-1600 mg/Kg

### **CORROSION / skin irritation:**

810 mg/24 hr rabbit skin - severe

100 mg/24 hr rabbit fur - moderate

### **SERIOUS DAMAGE / Eye irritation:**

162 mg rabbit eyes - moderate

10 mg rabbit eyes - mild

500 mg/24 hr rabbit eyes - mild

Respiratory or skin sensitization: Not a sensitizer of the airways or skin.

ASPIRATION HAZARD: Methylene chloride does not present a risk of aspiration.



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**MUTAGENS DATA:** Positive results have been observed in the Ames test. In mammalian systems, the responses have been generally negative.

**Immunotoxicity:** One study found no evidence of damage to the immune system of laboratory animals or decreased ability to fight disease.

**Neurotoxicity:** Tests in rats indicate no significant neurotoxic effects after exposure to concentrations of up to 2000 ppm for 90 days. No neurotoxic effects were observed in humans at typical levels of occupational exposure.

**DEVELOPMENT / REPRODUCTIVE:** No significant effects on development in female rats and mice exposed to 1250 ppm during gestation. A similar result was observed in rats exposed to 4500 ppm before and during pregnancy. An inhalation study of two generations showed no adverse reproductive effects in rats exposed to as much as 1500 ppm for weeks.

**CARCINOGEN STATUS:** Methylene chloride is carcinogenic in experimental animals at relatively high doses, by route (s) of administration, at site (s), of histologic type (s), or by mechanism (s) that do not considered relevant to worker exposure. Available epidemiological studies do not confirm an increased risk of cancer in humans. The available evidence suggests that this material is not likely to cause cancer in humans except under routes or levels of exposure uncommon or unlikely.

### XIII. DISPOSAL CONSIDERATIONS

The arrangement shall be in accordance with federal environmental control laws, existing state and local. Incineration is the preferred method.

**Provision of products and requirements for disposal:**

According to local regulations, will take the incineration of hazardous waste.

**Contaminated packaging:**

Empty containers with product residues; observe all Precautions for the product. Not hot cut empty containers welded electric or gas because vapors and gases are formed highly toxic. If empty contaminated packaging are recycled or disposed of, the receiver must be informed about potential hazards.

**HOR OR NOT EMPTY CONTAINERS WITH CUTTING WELDING TORCH GAS OR ELECTRIC.**

### XIV. TRANSPORT INFORMATION

**DOT**

Proper Shipping name:	Nervion AF-1400
Class:	8
UN/ID No:	1760
Packing Group:	I





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### IATA

Proper Shipping name: Nervion AF-1400  
Class: 8  
UN/ID No: 1760  
Packing Group: I

### IMDG

Proper Shipping name: Nervion AF-1400  
Class: 8  
UN/ID No: 1760  
Packing Group: I

## XV. REGULATORY INFORMATION

### Federal regulations of the United States

Standard Classification Hazard Communication OSHA: This material is classified as Hazardous under the OSHA regulations.

## XVI. OTHER INFORMATION

### HMIS RATINGS

HEALTH: 3  
FLAMMABILITY: 1  
PHYSICAL HAZARD: N/A

### NFPA RATING

HEALTH: 3  
FLAMMABILITY: 1  
REACTIVITY: 1

0 = Insignificant  
1 = Slight  
2 = Moderate  
3 = High  
4 = Extreme

0 = Insignificant  
1 = Slight  
2 = Moderate  
3 = High  
4 = Extreme  
\* = Chronic Hazard for health.

THE INFORMATION PROVIDED IN THIS SAFETY DATA SHEET IS CORRECT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF AT THE DATE OF ITS PUBLICATION. THE INFORMATION GIVEN IS DESIGNED ONLY AS A GUIDANCE FOR SAFE HANDLING, USE, PROCESSING, STORAGE, TRANSPORTATION, DISPOSAL AND RELEASE AND IS NOT TO BE CONSIDERED A WARRANTY OR QUALITY SPECIFICATION. THE INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS, UNLESS SPECIFIED IN THE TEXT.



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<END OF MSDS>