Material Safety Data Sheet
INERGEN 8% CO2, 52% N2 IN ARGON

Issue date 09/10/2019

MSDS No. : Ax-1920-90

Warning

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

1.1. Product identifier

Trade Name : INERGEN 8% CO2, 52% N2 IN ARGON

Product Number : Ax-1920-90

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

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use
Test gas/Calibration gas
Laboratory use
Contact supplier for more information on uses

Uses advised against : Consumer use

1.3. Details of the Supplier of the Safety Data Sheet:

Manufacturer/Supplier: : Axcel Gases
1K/49, NIT, Faridabad, 121001
80KM Delhi Jaipur Highway, Distt.Rewari, 123106 Haryana, India
E-MAIL: info@axcelgases.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to WHS Regulation

Physical hazards — Gases under pressure : Compressed gas — H280

2.2. Label elements

Classification according to WHS Regulation

Hazard pictograms :

GHS04

Signal word : Warning

Hazard statements : H280 - Contains gas under pressure; may explode if heated.

Precautionary statements

- Storage : P403 - Store in a well-ventilated place

2.3. Other hazards

(Contd. on page 2)

: Asphyxiant in high concentrations

SECTION 3: Composition/information on ingredients

3.1. **Substance** : Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to WHS Regulation
Nitrogen	(CAS No) 7727-37-9 (EC no) 231-783-9 (EC index no) (REACH-no) *1	52	Press. Gas (Comp.), H280
Argon	(CAS No) 7440-37-1 (EC no) 231-147-0 (EC index no) (REACH-no) *1	Balance	Press. Gas (Comp.), H280
Carbon dioxide	(CAS No) 124-38-9 (EC no) 204-696-9 (EC index no) (REACH-no) *1	8	Press. Gas (Liq.), H280

Full text of R- and H-statements: see section 16

Contains no other components or impurities which will influence the classification of the product.

**1: Listed in Annex IV / V REACH, exempted from registration.*

**2: Registration deadline not expired.*

**3: Registration not required: Substance manufactured or imported < 1t/y.*

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped
- Skin contact : Adverse effects not expected from this product
- Eye contact : Adverse effects not expected from this product
- Ingestion : Ingestion is not considered a potential route of exposure

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

: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation
Refer to section 11

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

: None

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog
- Unsuitable extinguishing media : Do not use water jet to extinguish

5.2. Special hazards arising from the substance or mixture

Specific hazards : Exposure to fire may cause containers to rupture/explode

Hazardous combustion products : None

5.3. Advice for fire-fighters

(Contd. on page 3)

Specific methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems If possible, stop flow of product Use water spray or fog to knock down fire fumes if possible Move containers away from the fire area if this can be done without risk
Special protective equipment for fire fighters	: Use self-contained breathing apparatus Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters
Hazchemcode	: 2TE

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Try to stop release
Evacuate area
Monitor concentration of released product
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe
Ensure adequate air ventilation
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous
Act in accordance with local emergency plan
Stay upwind

6.2. Environmental precautions

: Try to stop release

6.3. Methods and material for containment and cleaning up

: Ventilate area

6.4. Reference to other sections

: See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product : The substance must be handled in accordance with good industrial hygiene and safety procedures
Only experienced and properly instructed persons should handle gases under pressure
Consider pressure relief device(s) in gas installations
Ensure the complete gas system was (or is regularly) checked for leaks before use
Do not smoke while handling product
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt
Do not breathe gas
Avoid release of product into atmosphere.

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Safe handling of the gas receptacle : Refer to supplier's container handling instructions
Do not allow backfeed into the container
Protect cylinders from physical damage; do not drag, roll, slide or drop
When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders
Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use
If user experiences any difficulty operating cylinder valve discontinue use and contact supplier
Never attempt to repair or modify container valves or safety relief devices
Damaged valves should be reported immediately to the supplier
Keep container valve outlets clean and free from contaminants particularly oil and water
Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment
Close container valve after each use and when empty, even if still connected to equipment
Never attempt to transfer gases from one cylinder/container to another
Never use direct flame or electrical heating devices to raise the pressure of a container
Do not remove or deface labels provided by the supplier for the identification of the cylinder contents
Containers should be stored in the vertical position and properly secured to prevent them from falling over.

7.2. Conditions for safe storage, including any incompatibilities

: Observe all regulations and local requirements regarding storage of containers
Containers should not be stored in conditions likely to encourage corrosion
Container valve guards or caps should be in place
Containers should be stored in the vertical position and properly secured to prevent them from falling over
Stored containers should be periodically checked for general condition and leakage
Keep container below 50°C in a well ventilated place
Store containers in location free from fire risk and away from sources of heat and ignition
Keep away from combustible materials.

7.3. Specific end use(s)

: None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

INERGEN 8% CO2, 52% N2 IN ARGON		
OEL : Occupational Exposure Limits		
Australia	TWA (mg/m³)	9000 mg/m³ Carbon Dioxide
	TWA (ppm)	5000 ppm Carbon Dioxide
	STEL (mg/m³)	54000 mg/m³ Carbon Dioxide
	STEL (ppm)	30000 ppm Carbon Dioxide

DNEL (Derived-No Effect Level) : No data available.

PNEC (Predicted No-Effect Concentration) : No data available.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

: Provide adequate general and local exhaust ventilation
Systems under pressure should be regularily checked for leakages
Ensure exposure is below occupational exposure limits (where available)
Oxygen detectors should be used when asphyxiating gases may be released
Consider work permit system e.g. for maintenance activities

8.2.2. Individual protection measures, e.g. personal protective equipment

: A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered:
PPE compliant to the recommended EN/ISO standards should be selected

(Contd. on page 5)

• Eye/face protection	: Wear safety glasses with side shields Standard EN 166 - Personal eye-protection
• Skin protection	
- Hand protection	: Wear working gloves when handling gas containers Standard EN 388 - Protective gloves against mechanical risk
- Other	: Wear safety shoes while handling containers Standard EN ISO 20345 - Personal protective equipment - Safety footwear
• Respiratory protection	: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask
• Thermal hazards	: None necessary.

8.2.3. Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

• Physical state at 20°C / 101.3kPa	: Gas.
• Colour	: Mixture contains one or more component(s) which have the following colour(s): Colourless.
Odour	: Odourless.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
pH value	: Not applicable for gas-mixtures.
Molar mass	: Not applicable for gas-mixtures.
Melting point	: Not applicable for gas-mixtures.
Boiling point	: Not applicable for gas-mixtures.
Flash point	: Not applicable for gas-mixtures.
Evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Flammability range	: Non flammable.
Vapour pressure [20°C]	: Not applicable.
Vapour pressure [50°C]	: Not applicable.
Relative density, gas (air=1)	: Heavier than air.
Solubility in water	: No data available
Partition coefficient n-octanol/water [log Kow]	: Not applicable for gas-mixtures.
Auto-ignition temperature	: Non flammable.
Viscosity [20°C]	: Not applicable.
Explosive Properties	: Not applicable
Oxidising Properties	: Not applicable

9.2. Other information

Other data : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

(Contd. on page 6)

10.1. Reactivity

: No reactivity hazard other than the effects described in sub-sections below

10.2. Chemical stability

: Stable under normal conditions

10.3. Possibility of hazardous reactions

: None

10.4. Conditions to avoid

: None

10.5. Incompatible materials

: None

10.6. Hazardous decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : No toxicological effects from this product

Skin corrosion/irritation : No known effects from this product

Serious eye damage/irritation : No known effects from this product

Respiratory or skin sensitisation : No known effects from this product

Germ cell mutagenicity : No known effects from this product

Carcinogenicity : No known effects from this product

Toxic for reproduction : Fertility : No known effects from this product

Toxic for reproduction : unborn child : No known effects from this product

STOT-single exposure : No known effects from this product

STOT-repeated exposure : No known effects from this product

Aspiration hazard : Not applicable for gases and gas mixtures

SECTION 12: Ecological information

12.1. Toxicity

Assessment : Classification criteria are not met.

12.2. Persistence and degradability

Assessment : No data available.

12.3. Bioaccumulative potential

Assessment : No data available.

12.4. Mobility in soil

Assessment : No data available.

12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB

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12.6. Other adverse effects

Effect on ozone layer : None

Effect on the global warming : Contains greenhouse gas(es) not covered by Regulation (EC) 842/2006.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contact supplier if guidance is required
Do not discharge into any place where its accumulation could be dangerous
Ensure that the emission levels from local regulations or operating permits are not exceeded
Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 16 05 05: Gases in pressure containers other than those mentioned in 16 05 04

13.2. Additional information

: None

SECTION 14: Transport information

14.1. UN number

UN-No. : 1956

14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : COMPRESSED GAS, N.O.S. (Nitrogen, Carbon dioxide)

Transport by air (ICAO-TI / IATA-DGR) : Compressed gas, n.o.s. (Nitrogen, Carbon dioxide)

Transport by sea (IMDG) : COMPRESSED GAS, N.O.S. (Nitrogen, Carbon dioxide)

14.3. Transport hazard class(es)

Labelling :

2.2 : Non-flammable, non-toxic gases

Transport by road/rail (ADG)

Class : 2
Hazchemcode : 2TE
Hazard identification number : 20
Tunnel Restriction : E - Passage forbidden through tunnels of category E

Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s)) : 2.2

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 2.2
Emergency Schedule (EmS) - Fire : F-C
Emergency Schedule (EmS) - Spillage : S-V

14.4. Packing group

(Contd. on page 8)

Transport by road/rail (ADR/RID) : Not applicable
Transport by air (ICAO-TI / IATA-DGR) : Not applicable
Transport by sea (IMDG) : Not applicable

14.5. Environmental hazards

Transport by road/rail (ADR/RID) : None.
Transport by air (ICAO-TI / IATA-DGR) : None.
Transport by sea (IMDG) : None.

14.6. Special precautions for user

Packing Instruction(s)

Transport by road/rail (ADR/RID) : P200
Transport by air (ICAO-TI / IATA-DGR)
Passenger and Cargo Aircraft : 200
Cargo Aircraft only : 200
Transport by sea (IMDG) : P200

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency
Before transporting product containers:
- Ensure there is adequate ventilation
- Ensure that containers are firmly secured
- Ensure cylinder valve is closed and not leaking
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted
- Ensure valve protection device (where provided) is correctly fitted.

HAZCHEMCODE : 2TE

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15: Regulatory information

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

National regulations

Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

: A CSA does not need to be carried out for this product

SECTION 16: Other information

· Ensure all national/local regulations are observed. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
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· Abbreviations and acronyms:

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways IMDG:
International Maritime Code for Dangerous Goods
DOT: US Department of Transportation IATA:
International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists EINECS:
European Inventory of Existing Commercial Chemical Substances ELINCS:
European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA:
National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA) LC50:
Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic vPvB: very
Persistent and very Bioaccumulative NIOSH: National
Institute for Occupational Safety OSHA: Occupational
Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit REL:
Recommended Exposure Limit
Flam. Gas 1: Flammable gases – Category 1
Press. Gas: Gases under pressure – Compressed gas Press.
Gas: Gases under pressure – Dissolved gas

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