Air Liquide

SAFETY DATA SHEET

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Revised edition no : 4.0 Revision date : 2023-01-23

Supersedes version of : 2021-07-16

ALPHAGAZ MIX H2 40%/HE

NOAL_1006 UFI: PDS2-H08P-E00W-2E0P

Country : DK / Language : EN

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

1.1. Product identifie	<u>r</u>		
Trade name SDS no		HAGAZ MIX H2 40%/HE L_1006	
		FI: PDS2-H08P-E00W-2E0P	
1.2. Relevant identifi	ed uses of the substance or mixture	and uses advised against	
Relevant identified use Uses advised against	Indus Iabor Cont : Cons Uses	strial and professional uses. Perform risk assessment prior to use. strial and professional use for chemical analysis, calibration, (routine) quality control, ratory use, under controlled conditions. act supplier for more information on uses. sumer use. s other than those listed above are not supported, contact your supplier for more mation on other uses.	
1.3. Details of the su	pplier of the safety data sheet		
Company identificati	on		
Supplier AIR LIQUIDE Denma Høje Taastrupvej 42 2630 Taastrup - DEN T +45 76 25 25 25 info.denmark@airligu	IMARK		
E-Mail address (com	petent person) : eunord	ic-sds@airliquide.com	
1.4. Emergency telep	hone number		
Emergency telephone	(24 /	7) ilability	
SECTION 2: Haz	ards identification		
2.1. Classification of	the substance or mixture		
Classification accord	ing to Regulation (EC) No. 1272/200	8 [CLP]	
Physical hazards	Flammable gases, Category 1B Gases under pressure : Compres	H221 ssed gas H280	
2.2. Label elements			
Labelling according	o Regulation (EC) No. 1272/2008 [Cl	_P]	
Hazard pictograms (Cl	.P) :		

Signal word (CLP) Hazard statements (CLP) : Danger

GHS02

: H221 - Flammable gas. H280 - Contains gas under pressure; may explode if heated.

GHS04

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		UFI: PDS2-H08P- E00W-2E0P
		Country : DK / Language : EN
Precautionary statements (CLP)		1
- Prevention	: P210 - Keep away from heat, hot surfaces, spar No smoking.	rks, open flames and other ignition sources.
- Response	 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 - In case of leakage, eliminate all ignition sources. 	
- Storage	: P403 - Store in a well-ventilated place.	
2.3. Other hazards		
	None.	

Not classified as PBT or vPvB. The substance/mixture has no endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not established.

3.2. Mixtures

Name	Product identifier	Composition [V- %]:	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Helium	CAS-No.: 7440-59-7 EC-No.: 231-168-5 EC Index-No.: REACH-no: *1	60	Press. Gas (Comp.), H280
Hydrogen	CAS-No.: 1333-74-0 EC-No.: 215-605-7 EC Index-No.: 001-001-00-9 REACH-no: *1	40	Flam. Gas 1A, H220 Press. Gas (Comp.), H280

Full text of H- and EUH-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.

*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. Perform cardiopulmonary resuscitation 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

See section 11.

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

None.

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SECTION 5: Firefighting measure	S	
5.1. Extinguishing media		
- Suitable extinguishing media - Unsuitable extinguishing media	Water spray or fog.Carbon dioxide.Do not use water jet to extinguish.	
5.2. Special hazards arising from the sub	stance or mixture	
Specific hazards Hazardous combustion products	: Exposure to fire may cause containers to rupture/expl : None.	ode.
5.3. Advice for firefighters		
Specific methods Special protective equipment for fire fighters	 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. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire. Move containers away from the fire area if this can be done without risk. In confined space 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. 	

SECTION 6: Accidental release measures
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For non-emergency personnel	: Act in accordance with local emergency plan.
	Stay upwind.
	See section 8 of the SDS for more information on personal protective equipment
For emergency responders	: See section 5.3 of the SDS for more information.
6.2. Environmental precautions	
	Try to stop release.
6.3. Methods and material for containm	ent and cleaning up
	Ventilate area.
6.4. Reference to other sections	
	See also sections 8 and 13.

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SECTION 7: Handling and sto	rage	
7.1. Precautions for safe handling		
Safe use of the product	 Do not breathe gas. Avoid release of product into atmosphere. The product must be handled in accordance with g procedures. Only experienced and properly instructed persons Consider pressure relief device(s) in gas installatio Ensure the complete gas system was (or is regula Do not smoke while handling product. Use only properly specified equipment which is su and temperature. Contact your gas supplier if in de Avoid suck back of water, acid and alkalis. Assess the risk of potentially explosive atmospher equipment. Purge air from system before introducing gas. Take precautionary measures against static disch- Keep away from ignition sources (including static of Consider the use of only non-sparking tools. Ensure equipment is adequately earthed. Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect containers from physical damage; do not of 	should handle gases under pressure. ons. irily) checked for leaks before use. itable for this product, its supply pressure oubt. res and the need for explosion-proof arge. discharges).
7.2. Conditions for safe storage, inclu	 When moving cylinders, even for short distances, designed to transport cylinders. Leave valve protection caps in place until the cont wall or bench or placed in a container stand and is If user experiences any difficulty operating valve d Never attempt to repair or modify container valves Damaged valves should be reported immediately to Keep container valve outlets clean and free from or Replace valve outlet caps or plugs and container or is disconnected from equipment. Close container valve after each use and when en Never attempt to transfer gases from one cylinder. Never use direct flame or electrical heating device Do not remove or deface labels provided by the su of the container. Suck back of water into the container must be prer Open valve slowly to avoid pressure shock. 	ainer has been secured against either a s ready for use. liscontinue use and contact supplier. or safety relief devices. to the supplier contaminants particularly oil and water. caps where supplied as soon as container npty, even if still connected to equipment. /container to another. s to raise the pressure of a container. upplier for the identification of the content vented.

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.

Segregate from oxidant gases and other oxidants in store.

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.



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7.3. Specific end use(s)

None.

8.1. Control parameters	
OEL (Occupational Exposure Limits)	: None available.
DNEL (Derived-No Effect Level)	: None available.
PNEC (Predicted No-Effect Concentration)	: None available.
8.2. Exposure controls	
8.2.1. Appropriate engineering controls	
	Provide adequate general and local exhaust ventilation. Product to be handled in a closed system. Systems under pressure should be regularily checked for leakages. Gas detectors should be used when flammable gases/vapours may be released. Consider the use of a work permit system e.g. for maintenance activities.
8.2.2. Individual protection measures, e.g. pe	rsonal protective equipment
• Eye/face protection	 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. Wear safety glasses with side shields.
Skin protection	Standard EN 166 - Personal eye-protection - specifications.
- Hand protection	: Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk, performance level 1 or highe
- Other	 Consider the use of flame resistant anti-static safety clothing. Standard EN ISO 14116 - Limited flame spread materials. Standard EN 1149-5 - Protective clothing: Electrostatic properties. Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
 Respiratory protection 	 Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with fu face mask. When indicated by a risk assessment, Respiratory Protective Equipment must be used. Th selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD. Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems. None necessary.
Thermal hazards	: None in addition to the above sections.
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.



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state at 20°C / 101.3kPa : Gas	
- Colour : Colourless	
Odour : Odourless.	
Odour threshold is subjective and inadequate to warn of overexp	osure.
pH : Not applicable for gases and gas mixtures.	
Melting point / Freezing point : Not applicable for gas mixtures.	
Boiling point : Not applicable for gas mixtures.	
Flash point : Not applicable for gases and gas mixtures.	
Flammability : Extremely flammable gas	
Explosive limits : Flammability range not available.	
Lower explosion limit : Not available	
Upper explosion limit : Not available	
Vapour pressure [20°C] : Not applicable.	
Vapour pressure [50°C] : Not applicable.	
Density : Not applicable	
Vapour density : Not applicable for gases and gas mixtures.	
Relative density, liquid (water=1) : Not applicable	
Relative density, gas (air=1) : Lighter or similar to air.	
Water solubility : Solubility in water of component(s) of the mixture :	
• Hydrogen: 1.6 mg/l • Helium: 1.5 mg/l	
Partition coefficient n-octanol/water (Log Kow) : Not applicable for gas mixtures.	
Auto-ignition temperature : Not known.	
Decomposition temperature : Not applicable.	
Viscosity, kinematic : No reliable data available.	
Particle characteristics : Not applicable for gases and gas mixtures.	

9.2. Other information

9.2.1. Information with regard to physical hazard of	lasses
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.
9.2.2. Other safety characteristics	
Molar mass	: Not applicable for gas mixtures.
Evaporation rate	: Not applicable for gases and gas mixtures.
Other data	: None.

SECTION 10: Stability and reactivity			
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			
	Can form explosive mixture with air.		
	May react violently with oxidants.		
Reactivity	: This mixture contains components with the following reactivity : Can form explosive mixture with air. May react violently with oxidants.		

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0.4. Conditions to avoid		1
	Keep away from heat, hot surfaces, sparks, open fla smoking.	mes and other ignition sources. No
	Avoid moisture in installation systems.	
10.5. Incompatible materials		
	Air, Oxidisers.	
	For additional information on compatibility refer to IS	O 11114.
0.6. Hazardous decomposition p	products	
	Under normal conditions of storage and use, hazardo be produced.	ous decomposition products should not

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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.
11.2. Information on other hazards	
Other information	: The substance/mixture has no endocrine disrupting properties.

SECTION 12: Ecological information		
<u>12.1. Toxicity</u>		
Assessment	: No ecological damage caused by this product.	
EC50 48h - Daphnia magna [mg/l]	: No data available.	
EC50 72h - Algae [mg/l]	: No data available.	
LC50 96 h - Fish [mg/l]	: No data available.	
12.2. Persistence and degradability		
Assessment	: No ecological damage caused by this product.	
12.3. Bioaccumulative potential		
Assessment	: No data available.	
<u>12.4. Mobility in soil</u>		
Assessment	: Because of its high volatility, the product is unlikely to cause ground or water pollution.	
	Partition into soil is unlikely.	
12.5. Results of PBT and vPvB assessm	ent	
Assessment	: Not classified as PBT or vPvB.	

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12.6. Endocrine disrupting properties		· · ·
	The substance/mixture has no endocrine disrupti	ng properties.
12.7. Other adverse effects		
Other adverse effects	: No known effects from this product.	
Effect on the ozone layer	: None.	
Effect on global warming	: Contains greenhouse gas(es).	
SECTION 13: Disposal conside	erations	
13.1. Waste treatment methods		
	Contact supplier if guidance is required.	
	Do not discharge into areas where there is a risk	0
	Waste gas should be flared through a suitable bu	
	Do not discharge into any place where its accum	0
	Ensure that the emission levels from local regulat exceeded.	lions or operating permits are not

Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at

: 16 05 04 *: Gases in pressure containers (including halons) containing hazardous

External treatment and disposal of waste should comply with applicable local and/or

: B/D - Tank carriage : Passage forbidden through tunnels of category B, C, D and E. Other

http://www.eiga.org for more guidance on suitable disposal methods.

: COMPRESSED GAS, FLAMMABLE, N.O.S. (Hydrogen, Helium)

: COMPRESSED GAS, FLAMMABLE, N.O.S. (Hydrogen, Helium)

carriage : Passage forbidden through tunnels of category D and E

: Compressed gas, flammable, n.o.s. (Hydrogen, Helium)

Return unused product in original container to supplier.

substances.

: 1954

: 2 : 1F

: 23

: 2.1

national regulations.

List of hazardous waste codes (from Commission

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

Decision 2000/532/EC as amended)

13.2. Additional information

14.1. UN number or ID number

14.2. UN proper shipping name

Transport by road/rail (ADR/RID)

14.3. Transport hazard class(es)

Transport by road/rail (ADR/RID)

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

Hazard identification number

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

Transport by sea (IMDG)

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

UN-No.

Labelling

Class

Classification code

Tunnel Restriction

2.1 : Flammable gases.

0	Air	Liqu	iide
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Transport by sea (IMDG)	
Class / Div. (Sub. risk(s))	: 2.1
	: Z.1 : F-D
Emergency Schedule (EmS) - Fire	
Emergency Schedule (EmS) - Spillage	: S-U
14.4. Packing group	
Transport by road/rail (ADR/RID)	: Not established.
Transport by air (ICAO-TI / IATA-DGR)	: Not established.
Transport by sea (IMDG)	: Not established.
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	: Forbidden.
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 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.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Restrictions on use National legislation Seveso Directive : 2012/18/EU (Seveso III)	 None. Contains no substance(s) listed on the REACH Candidate List Ensure all national/local regulations are observed. Covered.
National regulations	
Ensure all national/local regulations are observed.	
Germany	
Water hazard class (WGK)	: WGK nwg, Non-hazardous to water (Classification according to AwSV, Annex 1)
National Rules and Recommendations	: [German regulations] BetriebssicherheitsV mit TRBSen insbesondere TRBS 3145 / TRGS 725 Ortsbewegliche Druckgasbehälter", TRBS 2141, BGRegel 500 Teil 2.33: "Umgang mit Gasen", GefahrstoffV mit Technischen Regeln Gefährliche Stoffe TRGS insbesondere TRGS 407 "Tätigkeiten mit Gasen - Gefährdungsbeurteilung", TRGS 400, 500, 510, 900." BGR 104, TRBS 2152.



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Netherlands	
SZW-lijst van kankerverwekkende stoffen	: None of the components are listed
SZW-lijst van mutagene stoffen	: None of the components are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	: None of the components are listed
SZW-lijst van reprotoxische stoffen –	: None of the components are listed
Vruchtbaarheid	
SZW-lijst van reprotoxische stoffen – Ontwikkeling	: None of the components are listed
Denmark	
Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product
Switzerland	
Storage class (LK)	: LK 2 - Liquefied or pressurized gases
15.2. Chemical safety assessment	
	A CSA does not need to be carried out for this product.

SECTION 16: Other informatio	n
Indication of changes	: Safety data sheet in accordance with commission regulation (EU) No 2020/878.
Abbreviations and acronyms	 ATE - Acute Toxicity Estimate CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 EINECS - European Inventory of Existing Commercial Chemical Substances CAS# - Chemical Abstract Service number PPE - Personal Protection Equipment LC50 - Lethal Concentration to 50 % of a test population RMM - Risk Management Measures PBT - Persistent, Bioaccumulative and Toxic vPvB - Very Persistent and Very Bioaccumulative STOT - SE : Specific Target Organ Toxicity - Single Exposure CSA - Chemical Safety Assessment EN - European Agreement concerning the International Carriage of Dangerous Goods by Road IATA - International Air Transport Association IMDG code - International Maritime Dangerous Goods RID - Regulations concerning the International Carriage of Dangerous Goods by Road WGK - Water Hazard Class STOT - RE : Specific Target Organ Toxicity - Repeated Exposure UFI : Unique Formula Identifier
Training advice Further information	 Ensure operators understand the flammability hazard. Classification using data from databases maintained by the European Industrial Gases Association (EIGA). Data is maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at : http://www.eiga.eu. Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).

Full text of H- and EUH-statements		
Flam. Gas 1A	Flammable gases, Category 1A	
Flam. Gas 1B	Flammable gases, Category 1B	
H220	Extremely flammable gas.	

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		Country : DK / Language : EN
H221	Flammable gas.	
H280	Contains gas under pressure; may explode if heate	ed.
Press. Gas (Comp.)	Gases under pressure : Compressed gas	
DISCLAIMER OF LIABILITY	 Before using this product in any new process or compatibility and safety study should be carried 	

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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