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1. Identification of the substance/preparation and of the company/undertaking

Name of the commercial product	ASUR
Name	Glycerol
REACH type	Substance
Use of the substance/preparation	No additional information available.
Main use category	Industrial use Professional use Agricultural use
Industrial category	IC2 - Chemical industry: basic chemical product IC3 - Chemical industry: chemical products for synthesis IC5 - personal/private use
Company	ASUR Plant Breeding SAS 163, avenue de Flandre 60190 Estrées Saint Denis Tel.: 03 44 91 48 40 - Fax: 03 44 91 48 48 www.asur-plantbreeding.com
Official advisory body (France)	FR: Centre Anti-Poison de Paris Tel.: 00 33 1 40 05 48 48

2. Hazards identification


R phrases	Not classified as hazardous in accordance with the criteria set out in Directive 67/548/EEC and/or Directive 1999/45/EC
Fire hazard	DIRECT FIRE HAZARD - Combustible - INDIRECT FIRE HAZARD At temperatures above flash point: increased risk of fire/explosion
Explosion hazard	No direct explosion hazard

3. Composition/information on ingredients

Name	CAS number	EC number	Generic name	% w/w
Glycerol	56-81-5	200-289-5	Glycerin	> 99

4. First aid measures

Symptoms/damage	No additional information available.
Symptoms/damage following eye contact	Redness of the eye tissue - Lacrimation
Symptoms/damage following inhalation	ON HEATING: - Irritation of the respiratory tract - Irritation of the nasal mucous membranes
Symptoms/damage following ingestion	Nausea - Vomiting - Diarrhoea – AFTER INGESTION IN SIGNIFICANT QUANTITY: - Headache - Dehydration - Cardiac arrhythmia - Change in blood level/blood composition - Decreased renal function
General first aid	Monitor vital functions - Depending on condition: doctor/hospital
First aid following inhalation	Remove victim to fresh air
First aid following skin contact	Wash off immediately with plenty of water for 15 minutes/shower - Soap may be used – Remove clothing before washing

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First aid following eye contact	Rinse immediately with plenty of water for 15 minutes - Consult an ophthalmologist if irritation persists
First aid following ingestion	Rinse mouth with water - Immediately after ingestion: give plenty of water to drink - Victim fully conscious: induce vomiting immediately - Ingestion of large quantities: hospitalise immediately
Advice for doctor/physician	No additional information available.

5. Firefighting measures

General measures	Mark the danger area - In case of heating: close doors and windows of adjacent premises - In case of fire/heating: consider evacuation - Clean contaminated clothing
Extinguishing media - instructions	EXTINGUISHING MEDIA - Water spray - Alcohol resistant foam - Powder - Carbon dioxide - Dry sand - A solid jet (water or foam) may cause containers to overflow - FIREFIGHTING INSTRUCTIONS: - Cool tanks/drums with water spray/remove them to safety - Do not move the load if exposed to heat - Dilute toxic gases with water spray
Fire hazard	DIRECT FIRE HAZARD - Combustible – INDIRECT FIRE HAZARD - At temperatures above flash point: increased risk of fire/explosion
Reactivity hazard	Decomposes at elevated temperature: release of toxic/corrosive/combustible gases/vapours (acrolein) - Forms CO and CO2 on combustion - May polymerise at elevated temperature - Reacts violently with (strong) oxidisers: (increased) risk of fire/explosion - Reacts with (some) acids: (increased) risk of fire/explosion
Other information (firefighting measures)	No additional information available.


6. Accidental release measures

General measures	Mark the danger area - In case of heating: close doors and windows of adjacent premises - In case of fire/heating: consider evacuation - Clean contaminated clothing
Personal protection (Intervention)	Fire-resistant protective clothing - Gloves - Exposure to heat/fire: compressed air/oxygen apparatus
Handling of the product	Comply with legal requirements- Keep container tightly closed - Keep away from ignition sources/sparks - Clean contaminated clothing - Observe normal hygiene standards
Environmental precautions	No additional information available.
Leaks	Plug the leak, cut off the supply - Recover released product using suitable containers
Disposal	Absorb liquid spill with materials such as: sand, earth, vermiculite - or kieselguhr, crushed limestone - Place absorbed product in a closing container - Suitable container material: see "Handling" - Rinse away any residue with plenty of water - Clean equipment and clothing after handling
Cleaning methods	No additional information available.
Other information (accidental release)	No additional information available.

7. Handling and storage

The handling and storage information given in this section applies to all uses identified and described in this Safety Data Sheet.

Handling temperature	No additional information available.
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Handling of the product	Comply with legal requirements. Keep container tightly closed. Keep away from ignition sources/sparks. Clean contaminated clothing. Observe normal hygiene standards.
Storage area	Keep container in a well-ventilated place. Keep at ambient temperature. Keep out of direct sunlight. In accordance with legal requirements.
Collective storage	KEEP PRODUCT AWAY FROM: - heat sources – oxidising agents - (strong) acids - (strong) bases
Packaging: requirements	SPECIAL REQUIREMENTS: - closing - dry - clean - correctly labelled - complies with legal requirements - Place fragile packaging in a solid container
Packaging: choice of material	SUITABLE MATERIAL: - steel - aluminium - iron - synthetic material - glass
Recommended materials	Stainless steel
Incompatible materials	No additional information available.

8. Exposure controls

Limit value name	Glycerine (nevel)
Limit value (mg/m ³)	10 nevel
MAC name	Glycerol (nevel)
MAC (mg/m ³)	10 nevel
VME name	Glycérine (aérosols de)
VME (mg/m ³)	10 aéros
TLV name	Glycerin mist
TLV-TWA (mg/m ³)	10 mist
Risk management measures	No additional information available.
Handling of the product	Comply with legal requirements. Keep container tightly closed. Keep away from ignition sources/sparks. Clean contaminated clothing. Observe normal hygiene standards.
Personal protection (Handling)	Gloves - Safety goggles - Protective clothing - Mists: anti-mist mask with P1 type filter - In case of heating: gas mask with type A filter
Protective clothing - choice of material	GIVE GOOD RESISTANCE: - natural rubber - neoprene - PVC - viton - GIVE LESSER RESISTANCE: - styrene-butadiene rubber - GIVE POOR RESISTANCE: - polyurethane

9. Physical and chemical properties

Appearance	Depending on ambient temperature: solid or liquid material
Odour	Odourless
Colour	Colourless to pale yellow
Flash point	> 199 °C
Explosive limits (vol %)	2.6/11.3 vol %
Explosive limits (g/m ³)	99/435 g/m ³
Boiling point	290 °C
Viscosity	Approx. 1150 mPa-s (20 °C)
Decomposition temperature	290 °C
Critical temperature	452 °C
Vapour pressure	< 0.001 hPa (20 °C)
Vapour pressure (50 °C)	0.0033 hPa
Absolute density	approx. 1261.9 kg/m ³ (20 °C)

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Relative vapour density	3.17
Relative saturation density of vapour/air mixture	1.0
Surface tension	0.063 N/m (20 °C)
Log Pow -	1.76/2.6
Conductivity	6400000 pS/m
Solubility in water	Complete
Solubility in ethanol	Complete
Solubility in ether	0.2 g/100 ml
Miscibility	Soluble in most organic solvents g/100 ml
Auto-ignition temperature	370 °C
Softening point	< 20 °C
Other properties	Soluble in water. Soluble in ethanol. Soluble in acetone. Soluble in ethyl acetate. Insoluble in oils/fats. Low volatility. Gas/vapour heavier than air at 20 °C. Hygroscopic. The material gives a neutral reaction. Clear. Syrupy.

10. Stability and reactivity


Instability	Hygroscopic
Conditions to avoid	No additional information available.
Reactivity hazard	Decomposes at elevated temperature: release of toxic/corrosive/combustible gases/vapours (acrolein). Forms CO and CO ₂ on combustion. May polymerise at elevated temperature. Reacts violently with (strong) oxidisers: (increased) risk of fire/explosion. Reacts with (some) acids: (increased) risk of fire/explosion.
Collective storage	KEEP PRODUCT AWAY FROM: - heat sources - oxidising agents - (strong) acids - (strong) bases
Materials to avoid	No additional information available.
Hazardous decomposition products	On heating/combustion: release of toxic/combustible gases/vapours (acrolein)

11. Toxicological information

Eye irritation	No additional information available.
Skin irritation	No additional information available.
Skin sensitisation	No additional information available.
General toxicity	ACUTE TOXICITY - Not harmful if ingested (LD ₅₀ oral, rat >5000 mg/kg) - Not harmful on skin contact (LD ₅₀ dermal >5000 mg/kg) - Non-irritating to skin - Slightly irritating to respiratory tract - Slightly irritating to eyes - CHRONIC TOXICITY - Not listed in mutagenicity class (EC, MAK) - Not listed in carcinogenicity class (IARC, EC, TLV, MAK) - Not listed in teratogenicity class (EC, MAK)
Toxicity hazard	DIRECT TOXICITY HAZARD - Mild irritant – Additional information: see under "Toxicology" - INDIRECT TOXICITY HAZARD - Reactions involving a toxicity hazard: see "Reactivity hazard"
LD ₅₀ oral rat	12600 mg/kg
LD ₅₀ dermal rabbit	> 10000 mg/kg
RTECS number	MA8050000

12. Ecological information


LC ₅₀ fish 1	54000 mg/l (96 h, SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
LC ₅₀ fish 2	> 1000 mg/l (96 h, PISCES)

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LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
EC50 Daphnia 2	> 10000 mg/l (24 h, DAPHNIA MAGNA, MOBILITY)
EC50 other aquatic organisms 1	> 1000 mg/l (BACTERIA, ACTIVATED SLUDGE)
TLM fish 1	> 1000 ppm (96 h, PISCES)
TLM other aquatic organisms 1	> 1000 ppm (96 h)
Toxic threshold algae 1	> 10000 mg/l (168 h, SCENEDESMUS QUADRICAUDA, TOXICITY TEST)
Toxic threshold other aquatic organisms 1	2900 mg/l (192 h, MICROCYSTIS AERUGINOSA, TOXICITY TEST)
Toxic threshold other aquatic organisms 2	> 10000 mg/l (16 h, PSEUDOMONAS PUTIDA, TOXICITY TEST)
BOD	0.87 g O2/g of material
COD	1.16 g O2/g of material
ThOD	1.217 g O2/g of material
BOD (% ThOD)	71 % ThOD
Log Pow	- 1.76/2.6
Ecology - general	No additional information available.
Ecology - waste	LWCA (the Netherlands): KGA category 03 - Recycle by distillation - Remove to an authorised incinerator - equipped with an afterburner and a flue gas scrubber - Do not discharge into surface water
Ecology - soil	No information available on biodegradability in soil
Ecology - water	Mild water pollutant (surface water) Not harmful to fish (LC50 (96h) >1000 mg/l) Not harmful to aquatic organisms (EC50 >1000 mg/l) Not harmful to algae Not harmful to bacteria Bioaccumulation: not applicable Inhibits digestion of activated sludge at >1000 mg/l 50% Readily biodegradable in water Test: OECD 301D 82% 20 DAGEN Solvent
Ecology - air	Germany: TA-Luft Klasse 5.2.5
Other properties	Soluble in water - Soluble in ethanol - Soluble in acetone - Soluble in ethyl acetate - Insoluble in oils/fats - Non-volatile - Gas/vapour heavier than air at 20 °C - Hygroscopic - The material gives a neutral reaction - Clear - Syrupy
Other information	No additional information available.
Disposal	Absorb liquid spill using materials such as sand, earth, vermiculite - or kieselguhr, crushed limestone - Place absorbed product in a closing container - Suitable container material: see "Handling" - Rinse away any residue with plenty of water - Clean equipment and clothing after handling
EURAL	No additional information available.
Regional legislation (waste)	No additional information available.

14. Transport information

ADR transport regulations	Not subject
ADR description transport document	
RID class	Not subject
ADR transport regulations	Not subject
ADNR class	Not subject
IMDG class-	
IMDG transport regulations	Not subject
ICAO class	Not subject
ICAO transport regulations	Not subject
ICAO subsidiary risks	004
ICAO Instruction "cargo"	Not applicable

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ICAO Instruction "passenger" Not applicable
ICAO Instruction "passenger" - Limited quantities Not applicable
Other information (transport) No additional information available.

15. Regulatory information

Chemical inventories Listed in AICS, DSL, ECL, ENCS, IECS, NZIoC, PICCS, SWISS, TSCA, EC inventories
REACH pre-registration number all ingredients of this product are exempt in accordance with Regulation 987/2008/EC amending Regulation 1907/2006/EC (REACH) as regards Annexes IV and V.
R phrases Not classified as hazardous in accordance with the criteria set out in Directive 67/548/EEC and/or Directive 1999/45/EC
EC number 200-289-5
WGK class 1 (low hazard to aquatic environment)
Label name No additional information available.
Not classified as hazardous in accordance with the criteria set out in Directive 67/548/EEC and/or Directive 1999/45/EC

16. Other information

Key to chemical inventories

AICS = Australian Inventory of Chemical Substances
DSL = Canadian Domestic Substances List
ECL = Korean Existing Chemical List
ENCS = Japanese Existing and New Chemicals Substances List
IECS = Inventory of Existing Chemicals Substances in China
NZIoC = New Zealand Inventory of Chemicals
PICCS = Philippine Inventory of Chemicals and Chemical Substances
SWISS = Swiss Information List for Dangerous Substances IGS
TSCA = USA Toxic Substances Control Act

Training advice No additional information available.
SDS version 01.01
Date of publication of SDS 21/07/2009
Reason for revision of SDS No additional information available.
REACH references No additional information available.
Other regional information No additional information available.
Other information No additional information available.

SDS: in accordance with EC Directive 2001/58/EC and REACH Regulation 1907/2006 Annex II

REACH clause:

The data in this Safety Data Sheet are consistent with the CSR, insofar as data were available at the time of compilation (see revision date and version).

Users are responsible for taking the precautions mentioned and for ensuring that they have all necessary information in order to use this product.