

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

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

##### 1.1. Product identifier

Substance / mixture	Gram II
UFI	mixture
Other mixture names	HEM1-UE32-E00A-WAF6
Albert II solution, Lugol solution for microbiology	

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

**Mixture's intended use**  
Analytical chemistry. Laboratory synthesis.

##### Mixture uses advised against

The product should not be used in ways other than those referred in Section 1.

##### 1.3. Details of the supplier of the safety data sheet

##### Supplier

Name or trade name	Ing. Petr Švec - PENTA s.r.o.
Address	Radiová 1122/1, Praha 10, 102 00
	Czech Republic
Identification number (CRN)	02096013
VAT Reg No	CZ02096013
Phone	+420 226 060 681
E-mail	info@pentachemicals.eu
Web address	www.pentachemicals.eu

##### Competent person responsible for the safety data sheet

Name	Ing. Petr Švec - PENTA s.r.o.
E-mail	info@pentachemicals.eu

##### 1.4. Emergency telephone number

European emergency number: 112 112

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

##### Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

STOT RE 2, H373 (thyroid gland)

Full text of all classifications and hazard statements is given in the section 16.

##### Most serious adverse effects on human health and the environment

May cause damage to thyroid gland through prolonged or repeated exposure.

##### 2.2. Label elements

##### Hazard pictogram



##### Signal word

Warning

##### Hazardous substances

Potassium iodide

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

#### Hazard statements

H373 May cause damage to thyroid gland through prolonged or repeated exposure.

#### Precautionary statements

P260 Do not breathe vapours.

P314 Get medical advice/attention if you feel unwell.

#### 2.3. Other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

**Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment**

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 7681-11-0 EC: 231-659-4 Registration number: 01-2119966161-40-0000	Potassium iodide	1	STOT RE 1, H372 (thyroid gland)	
Index: 053-001-00-3 CAS: 7553-56-2 EC: 231-442-4 Registration number: 01-2119485285-30-0000	iodine	0,5	Acute Tox. 4, H302+H312+H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 1, H372 (thyroid gland) Aquatic Acute 1, H400 (M=1)	

Full text of all classifications and hazard statements is given in the section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet.

##### If inhaled

Terminate the exposure immediately; move the affected person to fresh air.

##### If on skin

Remove contaminated clothes.

##### If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person.

##### If swallowed

Rinse out the mouth with clean water. In the event of issues, find medical help.

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

##### If inhaled

Not expected.

##### If on skin

Not expected.

##### If in eyes

Not expected.

##### If swallowed

Not expected.

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

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

Symptomatic treatment.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, water spray jet, water mist.

##### Unsuitable extinguishing media

Water - full jet.

#### 5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

#### 5.3. Advice for firefighters

Use a self-contained breathing apparatus and full-body protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Follow the instructions in the Sections 7 and 8.

#### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

#### 6.3. Methods and material for containment and cleaning up

Ventilate the room. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water.

#### 6.4. Reference to other sections

See the Section 7, 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

#### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Recommended storage temperature 15-25°C.

#### 7.3. Specific end use(s)

In microbiology in diagnostic microscopic examination.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

##### DNEL

iodine					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers	Inhalation	0.07 mg/m <sup>3</sup>	Chronic effects systemic		98/24/ES
Workers	Dermal	0.01 mg/kg	Chronic effects systemic		98/24/ES

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

#### PNEC

iodine			
Route of exposure	Value	Value determination	Source
Freshwater environment	0.0001813 mg/l		98/24/ES
Marine water	0.0006001 mg/l		98/24/ES
Freshwater sediment	3.99 mg/kg		98/24/ES
Soil (agricultural)	5.95 mg/kg		98/24/ES

#### 8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

##### Eye/face protection

It is not needed.

##### Skin protection

Hand protection: Protective gloves resistant to the product. Contaminated skin should be washed thoroughly.

##### Respiratory protection

Halfmask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of substances are exceeded or in a poorly ventilated environment.

##### Thermal hazard

Not available.

##### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	gas
Colour	red-brown
Odour	after iodine
Melting point/freezing point	data not available
Boiling point or initial boiling point and boiling range	data not available
Flammability	data not available
Lower and upper explosion limit	data not available
Flash point	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	gas
Kinematic viscosity	data not available
Solubility in water	data not available
Partition coefficient n-octanol/water (log value)	data not available
Vapour pressure	data not available
Density and/or relative density	data not available
Relative vapour density	data not available
Particle characteristics	data not available

#### 9.2. Other information

not available

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

#### SECTION 10: Stability and reactivity

##### 10.1. Reactivity

not available

##### 10.2. Chemical stability

The product is stable under normal conditions.

##### 10.3. Possibility of hazardous reactions

Unknown.

##### 10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

##### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

##### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

#### SECTION 11: Toxicological information

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

No toxicological data is available for the mixture.

##### Acute toxicity

Based on available data the classification criteria are not met.

iodine					
Route of exposure	Parameter	Value	Exposure time	Species	Sex
Oral	LD <sub>50</sub>	316.58 mg/kg		Rat (Rattus norvegicus)	
Dermal	LD <sub>50</sub>	1432.16 mg/kg		Rabbit	
Inhalation	LC <sub>50</sub>	4.588 mg/kg	4 hours	Rat (Rattus norvegicus)	

##### Skin corrosion/irritation

Based on available data the classification criteria are not met.

##### Serious eye damage/irritation

Based on available data the classification criteria are not met.

##### Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

##### Germ cell mutagenicity

Based on available data the classification criteria are not met.

##### Carcinogenicity

Based on available data the classification criteria are not met.

##### Reproductive toxicity

Based on available data the classification criteria are not met.

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

#### Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

#### Toxicity for specific target organ - repeated exposure

May cause damage to thyroid gland through prolonged or repeated exposure.

#### Aspiration hazard

Based on available data the classification criteria are not met.

#### 11.2. Information on other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

### SECTION 12: Ecological information

#### 12.1. Toxicity

not available

##### Acute toxicity

iodine				
Parameter	Value	Exposure time	Species	Environment
LC <sub>50</sub>	1.67 mg/kg	96 hours	Fish (Oncorhynchus mykiss)	
EC <sub>50</sub>	0.55 mg/kg	48 hours	Daphnia (Daphnia magna)	
IC <sub>50</sub>	0.13 mg/kg	72 hours	Algae (Desmodesmus subspicatus)	
EC <sub>50</sub>	280 mg/l	3 hours	Microorganisms (Photobacterium phosphoreum)	

#### 12.2. Persistence and degradability

not available

#### 12.3. Bioaccumulative potential

Not available.

#### 12.4. Mobility in soil

Not available.

#### 12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

#### 12.6. Endocrine disrupting properties

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

#### 12.7. Other adverse effects

Not available.

### SECTION 13: Disposal considerations

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

#### 13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

#### Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

### SECTION 14: Transport information

#### 14.1. UN number or ID number

not subject to transport regulations

#### 14.2. UN proper shipping name

not relevant

#### 14.3. Transport hazard class(es)

not relevant

#### 14.4. Packing group

not relevant

#### 14.5. Environmental hazards

not relevant

#### 14.6. Special precautions for user

not available

#### 14.7. Maritime transport in bulk according to IMO instruments

not relevant

### SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been carried out (mixture).

### SECTION 16: Other information

#### A list of standard risk phrases used in the safety data sheet

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H372	Causes damage to thyroid gland through prolonged or repeated exposure.
H373	May cause damage to thyroid gland through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

#### Guidelines for safe handling used in the safety data sheet

- P260 Do not breathe vapours.  
P314 Get medical advice/attention if you feel unwell.

#### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

#### Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC <sub>50</sub>	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC <sub>50</sub>	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC <sub>50</sub>	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD <sub>50</sub>	Lethal dose of a substance in which it can be expected death of 50% of the population
log Kow	Octanol-water partition coefficient
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment
Eye Irrit.	Eye irritation
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

#### Training guidelines



## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Gram II

Creation date	27th October 2022	Version	2.0
Revision date	14th June 2023		

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

**Recommended restrictions of use**

not available

**Information about data sources used to compile the Safety Data Sheet**

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

**The changes (which information has been added, deleted or modified)**

The version 2.0 replaces the SDS version from 27 October 2022. Changes were made in sections 2, 15 and 16.

**More information**

Classification procedure - calculation method.

**Statement**

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.