
MATERIAL SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/ UNDERTAKING

1.1 Product identifier

Trade name **ZAKsan™**

1.2 Relevant identified uses of the substance and uses advised against

Identified uses

ZAKsan™ is a fertilizer.

Uses advised against

None.

1.3 Details of the supplier of the safety data sheet

Name Grupa Azoty Zakłady Azotowe Kędzierzyn
Spółka Akcyjna
Address PO Box 163; ul. Mostowa 30A;
47-220 Kędzierzyn-Koźle; Poland
Telephone No +48 77 481 20 00 (operator)
Person responsible for karta_nawozy@grupaazoty.com
safety data sheet (e-mail)

1.4 Emergency telephone numbers (in Poland)

Company's Dispatch Office	+48 77 481-34-01
Emergency system	112
Police	997
Fire	998
Medical	999

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance

Classification according to Regulation (EC) No 1272/2008

Oxidising solid (category 3), Ox. Solid 3. (H272: May intensify fire; oxidiser)

Serious eye irritation (category 2), Eye Irrit. 2. (H319: Causes serious eye irritation)

Classification according to Directive 1999/45/EC

O; R 8: Contact with combustible material may cause fire.

Xi; R 36: Irritating to eyes.

2.2 Label elements

Signal word: WARNING

GHS pictograms:



GHS03:



GHS07:

Hazard statements:

H272: May intensify fire; oxidiser.

H319: Causes serious eye irritation.

Precautionary statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P221: Take any precaution to avoid mixing with combustibles.

P264: Wash hands thoroughly after handling.

P280: Wear eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

Based on available data it is concluded that ZAKsan™ does not meet the criteria for PBT (Persistent, Bioaccumulative and Toxic) and for vPvB (very Persistent and very Bioaccumulative) classifications.

Prevent product entry to surface water and ground water. High concentrations of that substance will be responsible for secondary eutrophication of water reservoirs – rapid algal growth and decline of oxygen content in water.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Name of substance	REACH registration number	EC number	CAS number	IUPAC name	Conc. [%]	Classification	
						Acc. to Regulation (EC) № 1272/2008	Acc. to Directive 67/548/EEC
Ammonium nitrate	01-2119490981-27-0017	229-347-8	6484-52-2	Ammonium nitrate	89.14÷93.71	Oxidising solid (cat. 3), Ox. Solid 3. (H272) Serious eye irritation (cat. 2), (H319)	O; R8 Xi; R36
Dolomite	–	–	–	–	5.79÷10.66	Not classified	Not classified

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Evacuate the affected person to fresh air. In case of any alarming symptoms, provide medical assistance.

Ingestion: After incidental ingestion, rinse mouth with water (applicable only if the affected person is conscious). Do not induce vomiting. In case of any alarming symptoms, provide medical assistance.

Skin contact: Wash with plenty of running water. Take off contaminated clothing and boots. In case of any alarming symptoms, seek medical assistance.

Eye contact: Flush with plenty of running water. In case of any alarming symptoms, seek medical assistance.

Advice for physician: methemoglobinaemia

4.2 Most important symptoms and effects, both acute and delayed

After incidental ingestion, blue-grey colouration of lips, nails and skin may be expected due to methemoglobinaemia.

4.3 Indication of any immediate medical attention and special treatment needed

In case of clinical symptoms of methemoglobinaemia, qualified medical personnel should immediately administer 100 % oxygen for breathing, and 1 g of ascorbic acid (intravenously). When a physician is present, he may give 10-50 ml of methylene blue.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Small fire: Non-flammable product, but it may intensify fire. Use water to extinguish.

Large fire: Non-flammable product, but it may intensify fire. Use water to extinguish.

Unsuitable extinguishing media

Do not use fire foams and dry extinguishing powders.

5.2 Special hazards arising from the substance

It may be explosive when contacted with flammable or organic materials, and especially in a fire under confined conditions.

Ammonium nitrate may release hazardous decomposition products in a fire, i.e.: nitrogen oxides (NO, NO₂, etc.), ammonia (NH₃) and/or amines.

5.3 Advice for firefighters

No special recommendations. Use protective clothing and isolating type breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing (Section 8: *Exposure controls / personal protection*).

6.2 Environmental precautions

Prevent product entry to surface water and ground water.

6.3 Methods and material for containment and cleaning up

Small spillage: Collect the product and place it in a properly marked/labelled waste container. Flush the spill site thoroughly with water. Do not use sawdust and/or any other flammable material to collect the product.

Large spillage: Collect the product and place it in a properly marked/labelled waste container. Transfer for recovery. Flush the spill site thoroughly with water. If the spilled substance penetrates into ground water, inform the competent local authorities. Do not use sawdust and/or any other flammable material to collect the product.

6.4 Reference to other sections

Note: For personal protective equipment, refer to Section 8: *Exposure controls / personal protection*). For waste treatment methods, refer to Section 13: *Disposal considerations*.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Because ZAKsan™ is hygroscopic, it shall be stored in unit packages, in clean and dry storage buildings, on non-flammable floors or linings which keep water/moisture away. The fertilizer should be protected against water, atmospheric precipitation, direct sunlight and heating up to over 30°C. No open flame devices may be used in the rooms where ZAKsan™ is stored. The wiring system(s) shall be protected against short circuit. No chemical compounds or materials which could react with ZAKsan™, like: plant pesticides, chlorine-containing fertilizers, organic substances, strongly alkaline substances (e.g. soda lye), lime, cement, powdered metals, metal oxides or acids, or flammable materials, like: coal, sawdust, greases or engine fuels, should be placed in the immediate vicinity of the fertilizer.

7.2 Conditions for safe storage, including any incompatibilities

Avoid any contact with flammable materials and reducing agents. Do not expose to high temperatures and/or sunlight.

If more than 1250 Mg of ZAKsan™ is stored in one location, that site is qualified as a lower-tier establishment, while the stock over 5000 Mg qualifies the site as an upper-tier establishment, according to Directive 2012/18/EU of the European Parliament and of the Council, Annex I, part 2, item 2, Note 14.

7.3 Specific end use(s)

Note: This fertiliser may be stored close to nitrate fertilisers only.

Note: Refer to Section 10: *Stability and reactivity*.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

8.1.1 *OEL(s) for Poland*

PEL for ammonium nitrate – not established

STEL for ammonium nitrate – not established

PEL for other non-toxic industrial dusts, inclusive of free (crystalline) silica below 2 % – 10 mg/m³

8.1.2 Workers: long-term exposure – systemic effects (ammonium nitrate)

DNEL, dermal	21.3 mg/kg b.w.
DNEL, inhalation	37.6 mg/m ³

8.1.3 General population: long-term exposure – systemic effects (ammonium nitrate)

DNEL, dermal	12.8 mg/kg b.w.
DNEL, inhalation	11.1 mg/m ³
DNEL, oral	12.8 mg/kg b.w.

8.1.4 PNEC (ammonium nitrate)

Aqua (freshwater)	0.45 mg/l
Aqua (marine water)	0.045 mg/l
Aqua (intermittent releases)	4.5 mg/l
Sewage treatment plants	18 mg/l

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

None required.

The use of efficient ventilation satisfies the good industrial practice requirements.

8.2.2 Good occupational hygiene practices:

Do not eat, do not drink and do not smoke when handling the product. Wash hands after every contact with the product, before eating, smoking, using the lavatory, and at the end of work.

8.2.3 Personal protective equipment: For commercial scale



EYE AND FACE PROTECTION

Use a face shield or safety goggles. The equipment must meet the requirements of EN 166.



HAND PROTECTION

Use protective gloves.



SKIN AND BODY PROTECTION

Wear protective clothing. Use protective footwear.





RESPIRATORY PROTECTION

In dusty atmospheres use respiratory protection, e.g. half-mask respirator. The equipment must meet the requirements of EN 149.

GENERAL INDUSTRIAL HYGIENE PRACTICE

Avoid any direct contact with eyes. Ensure that eyewash stations are close to the workstation location.



HYGIENE MEASURES

Do not eat, do not drink and do not smoke when handling the product. Take off contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

THERMAL HAZARD

Does not exist.

8.2.4 Environmental exposure controls:

If the product is released to surface water and/or ground water, inform the competent governmental agency.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

The product was placed on the market in the granulated form.

Data for ammonium nitrate

Appearance, at 20°C and 1013 hPa:	transparent/ white fusible crystals or granules, hygroscopic
Odour:	-
Odour threshold:	-
pH:	-
Melting/freezing point:	169.6°C at 1013 hPa
Boiling range:	substance decomposes before its boiling point is reached
Flash point:	inorganic mixture
Evaporation rate:	-
Flammability (solid, gas):	non-flammable mixture
Upper/lower explosive limit:	-
Vapour pressure:	test is not required
Vapour density:	-
Relative density, at 20°C:	1.72
Solubility:	high solubility in water (> 100 g/l)

<i>n</i> -Octanol/water partition coefficient:	inorganic mixture
Auto-ignition temperature:	test is not scientifically reasonable
Decomposition temperature:	≥ 210°C
Viscosity:	test is not scientifically reasonable
Explosive properties:	no
Oxidising properties:	yes

9.2 Other information

Grain size analysis: granulated product does not contain particles which could be absorbed in pulmonary alveoli (0 % < 0.5 mm)

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

ZAKsan™ is unstable when heated up to higher temperatures. Ammonium nitrate is an oxidizer and it reacts with flammable materials and reducing agents. Aqueous solutions of ammonium nitrate are weak acids.

10.2 Chemical stability

The product is stable under recommended storage conditions (ref. to Section 7).

10.3 Possibility of hazardous reactions

Its reactions with flammable and reducing substances are hazardous.

10.4 Conditions to avoid

The product will decompose upon heating. Avoid tightly closed containers.

10.5 Incompatible materials

Reducers, strong acids and bases, metal powders, flammable materials, chromates, zinc, copper and its alloys, and chlorides.

10.6 Hazardous decomposition products

Nitrogen oxides (NO, NO₂), ammonia (NH₃) and/or amines.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Data for ammonium nitrate

Metabolism

Ammonium nitrate will dissociate to produce the ammonium ions (NH_4^+) and nitrate ions. The ammonium cation is not a principal ion but it is a waste product of the animal cell metabolism which is then re-used in the protein synthesis through glutamate. Depending on a species, ammonia will be released directly to the environment or it will be converted to urea which is less toxic. Toxicity of nitrate in humans is expressed through enteropathic metabolism of nitrates to ammonia, where a nitrite makes an intermediate product.

Toxicokinetics

Based on low molecular weight, high water solubility, and probably low value of logPow, high absorption is expected. On the other hand, ions are produced as soon as the substance contacts a liquid, which reduces absorption. Hence, a factor of 50 % was assumed for the absorption through ingestion, skin and inhalation.

11.1.1 Relevant health effects

Acute toxicity

LD50 (oral): 2950 mg/kg b.w.

LD50 (skin): 5000 mg/kg b.w.

Acute toxicity through inhalation is excluded from the assessment for ammonium nitrate since its vapour pressure is too low and its particle size eliminates any possibility of absorption in pulmonary alveoli.

Skin corrosion/irritation

a) Skin irritation: no

Serious eye damage/irritation

b) Eye irritation: irritating, with fully reversible effects

c) Rabbit:

Cornea, score: 0.3; 0

Iris, score: 0.3; 0

Conjunctiva, score: 3.0; 2.3

Conjunctival oedema, score: 1.0

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- d) Respiratory irritation
No information available.

Corrosion

The mixture is not corrosive.

Sensitisation through inhalation or skin contact

- a) Sensitisation to skin or respiratory tract
- | | |
|--------------------|-------------------|
| Skin: | no sensitisation |
| Respiratory tract: | no data available |

Repeated dose toxicity

- a) Repeated dose toxicity: oral
No test data available for repeated dose toxicity for ammonium nitrate.
NOAEL for KNO₃: 256 mg/kg b.w.
- b) Repeated dose toxicity: inhalation
NOAEC: 185 mg/m³
- c) Repeated dose toxicity: skin
No tests available for skin.

Carcinogenicity

- a) Carcinogenicity: oral
No data available.
- b) Carcinogenicity: inhalation
No data available.
- c) Carcinogenicity: skin
No data available.
- d) Carcinogenicity: other routes of exposure
No data available.

Mutagenicity

Genetic toxicity: negative

Toxicity for reproduction

No reliable study reports are available for ammonium nitrate.

SECTION 12. ECOLOGICAL INFORMATION

Data for ammonium nitrate

12.1 Toxicity

Toxicity to fish, aquatic invertebrates, algae and cyanobacteria, aquatic plants (other than algae), and aquatic microorganisms

LC50/48 h	Fish: <i>Cyprinus carpio</i>	447 mg/l; short-term
EC50/24 h/48 h	KNO ₃ , Crustaceans: <i>Daphnia magna</i>	490 mg/l; short-term
EC50/10 d	KNO ₃ , Algae: <i>numerous benthonic diatoms</i>	> 1700 mg/l

Toxicity to terrestrial plants

Once absorbed by plants, nitrates undergo reduction to nitrites – that process involves nitrate reductase. That enzyme is present in plants, in some species of bacteria, and in the digestive tract tissues of mammals. Nitrites will undergo further reduction in the photosynthesis and carbohydrate synthesis processes. Under drought or frost conditions, in shaded places, or when other nutrients are absent, the photosynthesis and protein synthesis processes will slow down. Yet, nitrates may still be absorbed and they will be accumulated in plant tissues.

Microbiological activity in sewage treatment systems

EC50/180 min/NaNO ₃ , activated sludge (household)	> 1000 mg/l
EC10/180 min/NaNO ₃ , activated sludge (household)	180 mg/l

12.2 Persistence and degradability

Abiotic degradation

Ammonium nitrate is completely water-soluble. No other information is required/available.

Biodegradation

No tests are required for inorganic substances (REACH, Annex VII). Moreover, under anaerobic ammonia conversion process, one group of bacteria will oxidise ammonia to nitrites while another group will oxidise nitrites to nitrates. The average level of biodegradation in sewage treatment plants reaches 52 g N/kg dissolved substance/day (at 20°C). Decomposition of nitrates is faster under anaerobic conditions. For anaerobic conversion of nitrates to N₂, N₂O and NH₃, the biodegradation level in sewage treatment plants reaches 70 g N/kg dissolved substance/day (at 20°C).

12.3 Bioaccumulative potential

Aquatic environment

Simple inorganic salts are well water-soluble. They are present in the dissociated form in aqueous solutions. The bioaccumulative potential of such substances is low.

Soil

Alike for aquatic environment, the bioaccumulative potential in terrestrial organisms is also assessed as low.

12.4 Mobility in soil

Simple inorganic salts with high water-solubility will be present in the dissociated form in aqueous solutions. Hence, their absorption potential will be low. Moreover, the screening test (OECD 121) could not be conducted because of technical reasons, and QSAR(s) are not suitable for such types of substances.

Ammonium nitrate is not fixed in the soil and it will move away in/with water. Hence, ammonium nitrate may be leached out when soil is contacted with the amount of water which is higher than the amount absorbable by that amount of soil. That might happen principally in late autumn, in winter and in early spring. There are numerous studies on environmental impacts of NO_3^- and $\text{NH}_4^+/\text{NH}_3$.

12.5 Results of PBT and vPvB assessment

In accordance with Annex XIII to Regulation (EC) № 1907/2006, no assessment for PBT and vPvB was conducted for ammonium nitrate since it is an inorganic compound.

12.6 Other adverse effects

High concentrations of nitrates in water will contribute to a rapid increase in the population of algae, and loss of oxygen in fresh water systems (eutrophication).

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal must be in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition at the time of disposal as well as the local regulations. Hazardous wastes should be handled in accordance with the Regulation of the Minister of Environment of 27 September 2001, on waste catalogue.

13.1 Waste treatment methods

Product wastes should be recycled as far as possible and re-used as a fertiliser. Other waste materials should be transferred to authorised waste processors, first of all to be recycled. Do not discharge to the aquatic environment. Diluted solutions may be discharged to the sewage treatment plants which are capable of processing/eliminating nitrogen compounds.

Contaminated packages should be emptied as far as possible and after appropriate cleaning they may be taken for re-use. Spent packaging materials should be transferred for utilisation to authorised and competent waste processing companies.

Waste control legislation

1. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Official Journal of the EU of 2008, Vol. 51, L312), with further amendments.
2. Waste Disposal Law, of 14 December 2012 (Journal of Laws 2013, item 21), with further amendments and secondary legislation.
3. Law of 11 May 2001, on obligations of businessmen within management of some wastes, as well as on product fee and on deposit fee (Journal of Laws № 63, item 639; consolidated version in Journal of Laws № 90/2007, item 607), with further amendments and secondary legislation.
4. Law of 13 June 2013 (Journal of Laws 2013, item 888) on packages and spent packages.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number

RID/ADR	UN 2067
IMDG	code 5122
ADN	-
ICAO/IATA	-

14.2 UN proper shipping name

RID/ADR	Ammonium nitrate based fertilizer
IMDG	-
ADN	-
ICAO/IATA	-

14.3 Transport hazard class(es)

RID/ADR	5.1
IMDG	5.1

ADN -
ICAO/IATA -

14.4 Packing group

RID/ADR III
IMDG -
ADN -
ICAO/IATA -

14.5 Environmental hazards

RID/ADR -
IMDG -
ADN -
ICAO/IATA -

14.6 Special precautions for user

RID/ADR -
IMDG -
ADN -
ICAO/IATA -

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

15.1.1 EU legislation

1. Regulation (EC) № 1907/2006, of the European Parliament and of the Council, of 18 December 2006, concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) № 793/93 and Commission Regulation (EC) № 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 (Official Journal of the EU of 2006, Vol. 49, L396, with further amendments).
2. Regulation (EC) № 1272/2008, of the European Parliament and of the Council, of 16 December 2008, on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and

amending Regulation (EC) № 1907/2006 (Official Journal of the EU of 2008, Vol. 51, L353, with further amendments).

3. Commission Directives: 2000/39/EC of 8 June 2000, and 2006/15/EC of 7 February 2006, establishing a first list and a second list of indicative occupational exposure limit values.

15.1.2 Local legislation

1. Law on chemical substances and mixtures thereof, of 25 February 2011 (Journal of Laws № 63/2011, item 322), with further amendments and secondary legislation.
 2. Law of 27 April 2001, *The Environmental Protection Act* (Journal of Laws № 62, item 627; consolidated version in Journal of Laws № 25/2008, item 150), with further amendments and secondary legislation.
 3. Law of 18 July 2001, *The Water Act* (Journal of Laws № 115, item 1229; consolidated version in Journal of Laws 2012, item 145), with further amendments and secondary legislation.
 4. Waste Disposal Law, of 14 December 2012 (Journal of Laws 2013, item 21), with secondary legislation.
 5. Law of 11 May 2001, on obligations of businessmen within management of some wastes, as well as on product fee and on deposit fee (Journal of Laws № 63, item 639; consolidated version in Journal of Laws № 90/2007, item 607), with further amendments and secondary legislation.
 6. Law of 13 June 2013 (Journal of Laws 2013, item 888) on packages and spent packages.
 7. Law on transport of hazardous goods, of 19 August 2011 (Journal of Laws № 227, item 1367), with further amendments and secondary legislation.
 8. Law of 6 September 2001, on road transport (Journal of Laws № 125, item 1371; consolidated version in Journal of Laws № 125/2007, item 874), with further amendments and secondary legislation.
 9. Governmental Declaration, of 28 May 2013, on implementation of amended Annexes A and B to the European agreement concerning the international carriage of dangerous goods by road (ADR) which was concluded in Geneva on 30 September 1957 (Journal of Laws, of 16 July 2013, item 815 – consolidated version).
 10. Law of 26 June 1974, *Labour Code* (Journal of Laws № 24, item 141; consolidated version in Journal of Laws № 21/1998, item 94), with further amendments and secondary legislation.
 11. Law of 30 August 2002, on the conformity assessment system (Journal of Laws № 259/2005, item 2173; consolidated version in Journal of Laws № 204/2004, item 2087), with further amendments and secondary legislation.
 12. Law of 24 August 1991, on fire protection (Journal of Laws № 81, item 351; consolidated version in Journal of Laws № 147/2002, item 1229), with further amendments and secondary legislation.
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13. Governmental Declaration, of 29 June 2011, on implementation of changes to the Convention concerning International Carriage by Rail (COTIF) which was concluded/signed in Berne on 9 May 1980 (Journal of Laws № 180, item 1073).
 14. Governmental Declaration, of 16 May 2011, on implementation of changes to the Regulations concerning the international carriage of dangerous goods by rail (RID) which make Annex C to the Convention concerning International Carriage by Rail (COTIF) which was concluded/signed in Berne on 9 May 1980 (Journal of Laws № 137, item 805).

15.2 Chemical safety assessment

Chemical safety assessment has been carried out for ammonium nitrate.

SECTION 16. OTHER INFORMATION

Changes

According to REACH and CLP Regulations.

A key or legend to abbreviations and acronyms used

CSR	Chemical Safety Report.
EC50	Effective Concentration 50 %.
LC50	Lethal Concentration 50 %.
LD50	Lethal Dose 50 %.
NOAEL	No Observable Adverse Effect Level.
NOAEC	No Observable Adverse Effect Concentration.
PBT	Persistent, Bioaccumulative and Toxic.
REACH	Registration, Evaluation, Authorisation and restriction of Chemicals.
vPvB	Very persistent and very bioaccumulative.

16.1 Key literature references and sources of data

1. Ammonium nitrate registration dossier.
2. Chemical Safety Report.

List of relevant R phrases, hazard statements, safety phrases and precautionary statements

Hazard symbols (O)

O: Oxidising substance.

Hazard symbols (X)

Xi: Irritating substance.

R phrases

R8: Contact with combustible material may cause fire.

R36: Irritating to eyes.

Hazard statements

H272: May intensify fire; oxidiser.

H319: Causes serious eye irritation.

Precautionary statements

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P221: Take any precaution to avoid mixing with combustibles.

P264: Wash hands thoroughly after handling.

P280: Wear eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice/attention.

Advice on training

1. Every employer is obliged to instruct his employees who work in contact with ZAKsan™ on the hazards and personal protective equipment which have been specified in this Data Sheet.
2. Every distributor is obliged to provide the information specified in this Data Sheet to his clients who buy ZAKsan™.

In place of

This MSDS replaces the previous Sheet: KW-98/ZAK/PZ-021.03_06.

This Material Safety Data Sheet is NOT any product quality specification, and it may NOT be understood as any guarantee for the product quality or for the product compliance with the client's requirements for individual applications. The purpose of this MSDS is to provide the guidelines for safe handling, transport and storage of the substance (occupational safety and environmental protection). The figures and data specified herein are based on our current knowledge and on current legislation. The clients should verify that information against the provisions of the laws and/or regulations which are valid in their countries and/or companies.