



QS2 QUICK SET LIQUID

MATERIAL SAFETY DATA SHEET

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Substance/preparation and company identification

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Composition/information on ingredients

Chemical nature: Calcium diformate

Water

CAS No 544-17-2

Uses advised against Not identified.

Hazard identification

Classification of the substance or mixture

Acute toxicity - Oral

Category 5 - (H303)

Serious eye damage/eye irritation

Category 1 - (H318)

Label elements

Symbols/Pictograms

Signal word:

Danger

Hazard statements:

H318 - Causes serious eye damage

H303 - May be harmful if swallowed

Precautionary statements

P280 - Wear protective gloves and eye/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do.

P310 - Immediately call a POISON CENTER or doctor

Contains: Calcium diformate

Other hazards: None known

First Aid Measures

Description of first aid measures

General advice

Immediate medical attention is required. Emergency eyewash facilities must be located in the vicinity of where the product is handled.

Inhalation

Remove to fresh air. If irritation persists get medical advice/attention.

Skin contact

First aid measures not required, but wash exposed skin with soap and water for hygienic reasons.

Eye contact

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Use lukewarm water if possible.

Keep eye wide open while rinsing. Do not rub affected area.

Ingestion

Clean mouth with water and drink afterwards plenty of water. If a large quantity has been ingested or you feel unwell, get medical advice/attention.



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Self-protection of the first aider Not required.

Most important symptoms and effects, both acute and delayed

Eye contact: Causes severe irritation with flood of tears and pain and strong redness and swelling of the eye. Risk of permanent eye damage.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Firefighting Measures

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Water.

Chemical Name	CAS No	Weight-%
Calcium diformate	544-17-2	>98

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂). Calcium oxide (CaO).

Protective equipment and precautions for firefighters

In the event of fire, wear self-contained breathing apparatus.

Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear tightly sealed goggles, protective gloves and if dusty conditions dust filter mask (P2). Ensure adequate ventilation.

Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. Prevent further leakage or spillage if safe to do so. See

Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Small spill: Vacuum or sweep material and place in a disposal container.

Large spill: Vacuum or sweep the liquid and place in a disposal container.

Methods for cleaning up

Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

Reference to other sections

See Section 7,8,13 for more information.



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Handling and Storage

Precautions for safe handling

Ensure adequate ventilation. Wear tightly sealed goggles and protective gloves (chloroprene rubber, nitrile rubber).

General Hygiene Considerations

Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry and cool place.

Exposure Controls / Personal Protection

Control parameters

<u>Chemical Name</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>NIOSH IDLH</u>
Particulates not otherwise classified (PNOC)	TWA: 10 mg/m ³ inhalable particles, recommended TWA: 3 mg/m ³ respirable particles, recommended	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction TWA: 15 mppcf respirable fraction TWA: 50 mppcf total dust	Not available

Chemical Name	Alberta	British Columbia	Ontario	Quebec
Particulates not otherwise classified (PNOC)	TWA: 10 mg/m ³ TWA: 3 mg/m ³	TWA: 10 mg/m ³ TWA: 3 mg/m ³	TWA: 10 mg/m ³ TWA: 3 mg/m ³	TWA: 10 mg/m ³

Appropriate engineering controls

Eyewash stations. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

- Eye/face protection: Tight sealing safety goggles
- Hand Protection: Wear protective gloves. PPE - Glove material: Chloroprene rubber, CR, Nitrile rubber, NBR. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
- Skin and body protection: Body protection must be chosen depending on activity and possible exposure, e.g. apron, chemical resistant boots, chemical-protection suit.
- Respiratory protection: Provide suction extractors if dust is formed or use dust filter mask (P2).



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Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Clear Liquid
Odour	Odourless
Odour threshold	Not applicable

Property	Value	Remarks • Method
pH	Not applicable	
Melting point / freezing point	> 300 °C / 572 °F	OECD Test No. 102: Melting Point/ Melting Range
Boiling point / boiling range	Not applicable	
Flash point	Not applicable	
Evaporation rate	Not applicable	
Flammability (solid, gas)	Not flammable	
Explosive limits		
Upper explosive limits	Not applicable	
Lower explosive limits	Not applicable	
Vapour pressure	0.00000022 kPa	@ 20 °C Calculation method
Vapour density	Not applicable	
Relative density	Not applicable	
Water solubility	172 g/L	@ 20 °C OECD Test No. 105: Water Solu bility
Solubility(ies)	No information available	
Partition coefficient	-2.6	log POW (@20°C; OECD 107) Partition Coefficient (n-octanol/water)
Autoignition temperature	292 °C / 558 °F	
Decomposition temperature	408 °C	(OECD 102)
Kinematic viscosity	Not applicable	
Dynamic viscosity	Not applicable	
Explosive properties	Not explosive.	
Oxidising properties	Not oxidising.	
Density	2.0 g/cm ³	20°C (ISO 1183-1)
Bulk density	1200 kg/m ³	@ 20 °C



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Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions Conditions to avoid

No dangerous reactions known under normal conditions of use.

Incompatible materials

None known.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapours.

Stability and Reactivity

Reactivity

There exists no specific test data for this product. For further information, see the subsequent subsections of this chapter.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

No dangerous reactions known under normal conditions of use.

Conditions to avoid

None known.

Incompatible materials

None known.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapours.

Toxicological Information

Information on likely routes of exposure Dermal. Inhalation.

Symptoms related to the physical, chemical and toxicological characteristics

See Section 4 for more information.

Numerical measures of toxicity

Acute toxicity, May be harmful if swallowed.

Calcium diformate (544-17-2)

Method	Species	Exposure Route	Effective Dose	Remarks
OECD Test No. 401: Acute Oral Toxicity	Rat	Oral	3050	LD50 (lethal dose) mg/kg
EPA OTS 798.1150	Rat	Inhalation	>0.67	LC0 mg/l read-across from supporting substance (structural analogue)



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Skin corrosion/irritation: Non-irritating to the skin.

Method	Species	Exposure	Result
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Dermal	Non-irritant

Serious eye damage/eye irritation: Risk of serious damage to eyes.

Method	Species	Exposure	Result
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	Eye	Irritating to eyes. Causes serious eye damage.

Respiratory or skin sensitization: No sensitizing effects known.

Method	Species	Exposure	Result
OECD Test No. 406: Skin Sensitisation	Guinea pig	Skin	Not a skin sensitizer read-across from supporting substance (structural analogue)

Germ cell mutagenicity: Not mutagenic.

Method	Species	Results
OECD Test No. 471: Bacterial Reverse Mutation Test	in vitro	Negative
OECD Test No. 476: In vitro Mammalian Cell Gene Mutation Test	in vitro	Negative read-across from supporting substance (structural analogue)
OECD Test No. 477: Genetic Toxicology: Sex-Linked Recessive Lethal Test in Drosophila melanogaster	Drosophila melanogaster	Negative read-across from supporting substance (structural analogue)



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Carcinogenicity: No information available.

Method	Species	Exposure	Effective Dose	Result
OECD Test No. 453: Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	Oral	2000	NOAEL mg/kg bw/d Animal studies have not shown any carcinogenic poten- tial.

Reproductive toxicity: This product does not contain any known or suspected reproductive hazards.

Method	Species	Exposure	Effective Dose	Result
OECD Test No. 416: Two-Generation Reproduction Tox- icity	Rat	Oral	956	NOAEL mg/kg bw/d Effects on fertility read-across from supportingsubstan (structural ana- logue)
OECD Test No. 414: Pre-natal Develop- ment Toxicity Study	Rat	Oral	956	NOAEL mg/kg bw/d Developmental effects read-across from supporting sub- stance (structural ana- logue)

STOT - repeated exposure

Method	Species	Exposure	Effective Dose	Result
OECD Test No. 407: Repeated Dose 28- day Oral Toxicity Study in Rodents	Rat	Oral	3000	NOAEL mg/kg bw/d
OECD Test No. 408: Repeated Dose 90- Day Oral Toxicity Study in Rodents	Rat	Oral	3000	NOAEL mg/kg bw/d read-across from supporting sub- stance (structural ana- logue)



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Aspiration hazard

No hazard from product as supplied.

Ecological Information

Toxicity

Low toxicity to aquatic organisms.

Method	Species	Exposure route	Effective dose	Exposure time	Remarks
Draft guideline "Lethal effects towards zebrafish Brachydanio rerio (LC0, LC50, LC100; 48-96 h) of the German Federal Environmental Agency (UBA) (May 1984)	Brachydanio rerio	Freshwater	>1000	48h	LC0 mg/l
EPA-660/3-75-009	Daphnia magna	Freshwater	>1000	48h	EC50 (effective concentration) mg/l read-across from supporting substance
OECD Test No. 211: Daphnia magna Reproduction Test	Daphnia magna	Freshwater	>=100	21d	NOEC mg/l



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Method	Species	Exposure route	Effective dose	Exposure time	Remarks
OECD Test No. 211: Daphnia magna Reproduction Test	Daphnia magna	Freshwater	≥ 100	21d	NOEC mg/l
ASTM E-47.01	Pseudokirchneriella subcapitata	Freshwater	> 1000	72h	EC50 (effective concentration) mg/l read-across from supporting substance (structural analogue)
OECD Test No. 306: Biodegradability in Seawater	Bacteria toxicity		≥ 22.1	29d	NOEC mg/l read-across from supporting substance (structural analogue)

Bioaccumulative potential

No bioaccumulation potential.

Chemical Name	Partition coefficient	Bioconcentration factor (BCF)
Calcium diformate	-2.6	



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Persistence and degradability

Readily biodegradable.

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Method	Species	Exposure route	Effective dose	Exposure time	Remarks
OECD Test No. 306: Biodegradability in Sea-water	86%	28d	Readily biodegradable read-across from supporting substance (structural analogue)	21d	NOEC mg/l
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)	>75%	20d	Readily biodegradable	72h	EC50 (effective concentration) mg/l read-across from supporting substance (structural analogue)

Mobility in soil

The product is not expected to absorb to a high degree to suspended solids and sediment based upon the log K_{oc} which indicates a moderate to high mobility in soil.

Other adverse effects: None known.

Additional information * read-across from supporting substance (non polymeric substance)

Disposal Considerations

Disposal methods

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Thoroughly emptied and clean packaging may be recycled.

Transport Information

TDG Road transport Not regulated

RID Rail transport Not regulated



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IMDG Sea transport: Not regulated. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.**

IATA Air transport: Not regulated

Regulatory Information

International Regulations Not applicable.

National regulations Canada Not applicable.

Other Information

- Any other intended applications should be discussed with the manufacturer.
- If you have any queries relating to this MSDS, its contents or any other product safety related questions, please write to the following e-mail address: war99@singnet.com.sg
- The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.