Chem Cure Pak Safety Data Sheet

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

1.1 Product identifier

- Chem Cure Pak (All Sizes)

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

- Water-activated chemical heater for curing adhesives.

1.3 Details of the supplier of the safety data sheet

- NOV Fiber Glass Systems

  17115 San Pedro Avenue, Suite 200
  San Antonio, Texas 78232 USA

  Tel: 1-210-477-7500
  Fax: 1-210-231-5915

  E-mail: Mike.Thayer@nov.com

1.4 Emergency telephone number(s)

- 3E Company, 24-Hour Support (Access Code/Contract Number: 333386)
  - USA, Canada 1-888-298-2344
  - Asia, Pacific 1-760-476-3960
  - Europe, Middle East, Africa 1-760-476-3961
  - Americas 1-760-476-3962

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Physical

- Not classified

Health

- Acute toxicity, Category 4 (oral)
- Acute toxicity, Category 4 (dermal)
- Skin irritation, Category 2
- Eye damage, Category 1
- Specific target organ systemic toxicity – single exposure, Category 3 (respiratory tract irritation)

© 2014 National Oilwell Varco. All rights reserved

Environmental

- Chronic aquatic toxicity, Category 3

2.2 Label elements

Signal Word(s)

- DANGER

Pictogram(s)

Hazard Statements

- Physical
  - Not classified
- Health
  - H302: Harmful if swallowed
  - H312: Harmful in contact with skin
  - H315: Causes skin irritation
  - H318: Causes serious eye damage
  - H335: May cause respiratory irritation
- Environmental
  - H412: Harmful to aquatic life with long lasting effects

Precautionary Statements

- General
  - P103: Read label before use
- Prevention
  - P261: Avoid breathing dust/fume/gas/mist/vapor/spray
  - P273: Avoid release to the environment
  - P280: Wear protective gloves/protective clothing/eye protection/face protection
- Response
  - P302+P352: IF ON SKIN: Wash with plenty of soap and water
  - P304+P340+p312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
  - P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Disposal
  - P501: Dispose of contents/container in accordance with regulatory requirements.

2.3 Other Hazards

- PBT and vPvB assessment
    - None of the ingredients are considered to be either PBT or vPvB.

SECTION 3: Composition/information on Ingredients

3.1 Substances

Chemical Identity	CAS No.	EC No.	Concentration Range (weight %)
Calcium Oxide	001305-78-8	215-138-9	< 60
Oxalic Acid	000144-62-7	205-634-3	< 30
Sulfamic Acid	005329-14-6	226-218-8	< 20

3.2 Mixtures

- Not applicable

SECTION 4. First-aid measures

4.1 Description of first-aid measures

Inhalation

- Move to fresh air
- If difficulty in breathing or respiratory irritation; seek immediate medical attention
- If breathing has stopped; seek immediate medical attention, perform artificial respiration

Skin contact

- Wash affected area thoroughly with soap and water for at least 20 minutes
- If irritation develops or persists; seek medical attention

Eye contact

- Immediately flush with water for at least 20 minutes
- Seek medical attention

Ingestion

- Never give anything by mouth to an unconscious person
- Rinse mouth with water
- Seek immediate medical attention

4.2 Most Important symptoms and effects, both acute and delayed

- Temporary redness, inflammation of skin and eyes

4.3 Indication of any immediate medical attention and special treatment needed

- No further relevant information available

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Water spray, alcohol-resistant foam, dry chemical, carbon dioxide.

5.2 Specific hazards arising from the substance or mixture

- Nitrogen oxides
- Sulphur oxides
- Calcium oxide
- Carbon oxides

5.3 Advice for firefighters

- Wear self-contained breathing apparatus and protective clothing, as necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Use personal protective equipment.
- Avoid dust formation.
- Avoid breathing product.
- Ensure adequate ventilation.

6.2 Environmental precautions

- Do not allow spilled materials to enter storm sewers, sanitary sewers, or impact groundwater.
- Do not allow spilled materials to remain on the ground.

6.3 Methods and materials for containment and cleaning up

- Pickup and arrange disposal without creating dust.
- Sweep up and shovel.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- See also, *SECTION 8: Control parameters* and *SECTION 13: Disposal considerations*.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Avoid contact with skin and eyes and inhalation dusts.

7.2 Conditions for safe storage, including any incompatibilities

- Store in original packaging.

7.3 Specific end use(s)

- No additional data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Calcium Oxide
CAS No. 001305-78-8

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
Australia	2 mg/m^3	None established	Workplace Exposure Standards for Airborne Contaminants
Austria	2 mg/m^3	4 mg/m^3	Austrian OEL Regulation
Belgium	2 mg/m^3	None established	limites d'exposition professionnelle – VLEP/ Grenswaarden voor beroepsmatige blootstelling – GWBB
Canada - Alberta	2 mg/m^3	None established	Occupational Safety and Health Code
Canada – British Columbia	2 mg/m^3	None established	Occupational Health and Safety Regulation, Table of Exposure Limits for Chemical and Biological Substances
Canada - Manitoba	2 mg/m^3	None established	Workplace Safety and Health Act, Part 36
Canada - Ontario	2 mg/m^3	None established	Regulation 883, Control of Exposure to Biological or Chemical Agents
Canada - Quebec	2 mg/m^3	None established	Regulation respecting occupational safety and health
Canada - Saskatchewan	2 mg/m^3	4 mg/m^3	The Occupational Safety and Health Regulations
China	2 mg/m^3	None established	GBZ 2.1-2007, Occupational exposure limits for hazardous agents in the workplace
Denmark	2 mg/m^3	4 mg/m^3	Grænseværdier for stoffer og materialer
France	2 mg/m^3	None established	Institut National de Recherche et de Sécurité (INRS)
Germany (DFG)	1 mg/m^3	2 mg/m^3	List of MAK and BAT Values
Hungary	5 mg/m^3	5 mg/m^3	Decree 25/2000 (IX.30) on the Chemical Safety on Workplaces
Ireland	2 mg/m^3	None established	Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations
Latvia	5 mg/m^3	None established	Standard LVS 89:2004, Occupational exposure limit values of chemical substances in work environment

New Zealand	2 mg/m^3	None established	Workplace Exposure Standards and Biological Exposure Indices
Poland	2 mg/m^3	6 mg/m^3	Principles and Methods of Assessing the Working Environment
Singapore	2 mg/m^3	None established	Workplace Safety and Health (General Provisions) Regulations
South Korea	2 mg/m^3	None established	[Need reference]
Spain	5 mg/m^3	None established	Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT)
Sweden	1 mg/m^3	2.5 mg/m^3	Occupational Exposure Limit Values and Measures Against Air Contaminants (AFS 2005:17)
Switzerland	2 mg/m^3	2 mg/m^3	Verordnung über die Verhütung von Unfällen und Berufskrankheiten (VUV)", Art. 50 Abs.3
USA (ACGIH)	2 mg/m^3	None established	None
USA (NIOSH)	2 mg/m^3	None established	NIOSH Pocket Guide to Chemical Hazards (Recommendations Only)
USA (OSHA)	5 mg/m^3	None established	29 CFR 1910 Subpart Z, Toxic and Hazardous Substances
United Kingdom	2 mg/m^3	None established	EH40 Workplace exposure limits

Oxalic Acid
CAS No. 000144-62-7

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
Australia	1 mg/m^3	None established	Workplace Exposure Standards for Airborne Contaminants
Austria	1 mg/m^3	None established	Austrian OEL Regulation
Belgium	1 mg/m^3	2 mg/m^3	limites d'exposition professionnelle – VLEP/ Grenswaarden voor beroepsmatige blootstelling – GWBB
Canada - Alberta	1 mg/m^3	2 mg/m^3	Occupational Safety and Health Code
Canada – British Columbia	1 mg/m^3	2 mg/m^3	Occupational Health and Safety Regulation, Table of Exposure Limits for Chemical and Biological Substances
Canada - Manitoba	1 mg/m^3	2 mg/m^3	Workplace Safety and Health Act, Part 36
Canada - Ontario	1 mg/m^3	None established	Regulation 883, Control of Exposure to Biological or Chemical Agents
Canada - Quebec	1 mg/m^3	2 mg/m^3	Regulation respecting occupational safety and health
Canada - Saskatchewan	1 mg/m^3	2 mg/m^3	The Occupational Safety and Health Regulations
China	1 mg/m^3	2 mg/m^3	GBZ 2.1-2007, Occupational exposure limits for hazardous agents in the workplace
Denmark	1 mg/m^3	2 mg/m^3	Grænseværdier for stoffer og materialer
France	1 mg/m^3	None established	Institut National de Recherche et de Sécurité (INRS)
Germany (AGS)	1 mg/m^3	1 mg/m^3	Technical Rule for Hazardous Substances (TRGS) No. 900

Hungary	1 mg/m^3	None established	Decree 25/2000 (IX.30) on the Chemical Safety on Workplaces
Ireland	1 mg/m^3	None established	Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations
Latvia	1 mg/m^3	None established	Standard LVS 89:2004, Occupational exposure limit values of chemical substances in work environment
New Zealand	1 mg/m^3	2 mg/m^3	Workplace Exposure Standards and Biological Exposure Indices
Poland	1 mg/m^3	2 mg/m^3	Principles and Methods of Assessing the Working Environment
Singapore	1 mg/m^3	2 mg/m^3	Workplace Safety and Health (General Provisions) Regulations
South Korea	1 mg/m^3	2 mg/m^3	[Need reference]
Spain	1 mg/m^3	2 mg/m^3	Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT)
Sweden	1 mg/m^3	2 mg/m^3	Occupational Exposure Limit Values and Measures Against Air Contaminants (AFS 2005:17)
Switzerland	1 mg/m^3	None established	Verordnung über die Verhütung von Unfällen und Berufskrankheiten (VUV)", Art. 50 Abs.3
USA (ACGIH)	1 mg/m^3	2 mg/m^3	None
USA (NIOSH)	1 mg/m^3	2 mg/m^3	NIOSH Pocket Guide to Chemical Hazards (Recommendations Only)
USA (OSHA)	1 mg/m^3	None established	29 CFR 1910 Subpart Z, Toxic and Hazardous Substances
United Kingdom	1 mg/m^3	2 mg/m^3	EH40 Workplace exposure limits

Sulfamic Acid
CAS No. – Not applicable

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
No OELs were found for this ingredient.			

8.2 Exposure controls

Appropriate engineering controls

- If product is released from pack, provide adequate general and local exhaust ventilation to control airborne concentrations to below the occupational exposure limit values.

Personal protective equipment

- Eye and face protection
  - If product may be released from packet, approved safety glasses with side shields (e.g., ANSI Z87, EN166)
- Skin protection
  - Hand protection: IF product may be released from packet, nitrile rubber gloves are generally recommended. Different glove materials, thicknesses, and from different glove manufacturers may

provide varying degrees of protection. Temperature and specific use can impact glove effectiveness. Some gloves may be intended to be used only once and then discarded, while others may be used for longer periods of time. The glove supplier should provide the user with information regarding permeability and breakthrough time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

  - Other skin protection: If product may be released from packet, such clothing as to minimize or eliminate the chance of skin contact with the adhesive product.

- Respiratory protection

  - If ventilation is insufficient to keep airborne concentrations below the occupation exposure limit levels, full or half-mask respirator fitted with particulate filters. Filter masks may be of limited use in cases of high or unknown exposure.

Environmental exposure controls

- Do not flush into surface water or sanitary sewer system.
- Do not place directly onto ground.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

-	Appearance	White and purple powder
-	Odor	Slight to none
-	Odor threshold	No data available
-	pH	No data available
-	Melting point/freezing point	No data available
-	Initial boiling point and boiling range	No data available
-	Flash point	No data available
-	Evaporation rate	No data available
-	Flammability (solid, gas)	No data available
-	Upper/lower flammability or explosive limits	No data available
-	Vapor pressure	No data available
-	Vapor density (air = 1)	No data available
-	Relative density	1.10-1.20
-	Solubility(ies)	No data available
-	Partition coefficient: n-octanol/water	No data available
-	Auto-ignition temperature	No data available
-	Decomposition temperature	No data available
-	Viscosity	No data available
-	Explosive properties	No data available
-	Oxidizing properties	No data available

9.2 Other information

- No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

- No decomposition expected if product is stored and used as directed.

10.2 Chemical stability

- Product is stable under normal conditions of storage and use.

10.3 Possibility of hazardous reactions

- Product is stable under normal conditions of storage and use.

10.4 Conditions to avoid

- Keep container tightly closed.
- Keep away from moisture and water.
- This product may react with oxidizing agents and strong acids, silver compounds, and fufuryl alcohol.

10.5 Incompatible materials

- Avoid contact with oxidizing materials.

10.6 Hazardous decomposition products

- Thermal decomposition may produce carbon monoxide, carbon diozide, ammonia and formic acid.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

- Data for ingredients not listed were not found or not sufficient for classification.

Calcium Oxide (CAS No. 001305-78-8)

-	Oral	Rat	LD50	> 2000 mg/kg
-	Inhalation	---	---	No data found
-	Dermal	Rabbit	LD50	> 2500 mg/kg

Oxalic Acid (CAS No. 000144-62-7)

-	Oral	Rat:	LD50	5-11 mg/kg
-	Inhalation	—	—	No data found
-	Dermal	Rabbit	LD50	20000 mg/kg

Sulfamic Acid (CAS No. 005329-14-6)

-	Oral	Rat:	LD50	ca. 1450 mg/kg
-	Inhalation	—	—	No data found
-	Dermal	Rat	LD50	> 2000 mg/kg

Skin corrosion/irritation

- Data for ingredients not listed were not found or not sufficient for classification.

Calcium Oxide (CAS No. 001305-78-8)

- Rabbit Irritating

Oxalic Acid (CAS No. 000144-62-7)

- Rabbit Not irritating

Sulfamic Acid (CAS No. 005329-14-6)

- Unknown Highly irritating

Serious eye damage/irritation

- Data for ingredients not listed were not found or not sufficient for classification.

Calcium Oxide (CAS No. 001305-78-8)

- Rabbit Irritating

Oxalic Acid (CAS No. 000144-62-7)

- Rabbit Irritating

Sulfamic Acid (CAS No. 005329-14-6)

- Rabbit Moderately Irritating

Respiratory or skin sensitization

- Data for ingredients not listed were not found or not sufficient for classification.

Oxalic Acid (CAS No. 000144-62-7)

- Inhalation — No data found
- Skin Mouse Not Sensitizing

Germ cell mutagenicity

- Data for ingredients were not found or not sufficient for classification.

Carcinogenicity

- Data for ingredients were not found or not sufficient for classification.

Reproductive toxicity

- Data for ingredients were not found or not sufficient for classification.

STOT-single exposures

- Data for ingredients not listed were not found or not sufficient for classification.

Calcium Oxide (CAS No. 001305-78-8)

- Respiratory system Irritation

STOT-repeated exposures

- Data for ingredients were not found or not sufficient for classification.

Aspiration hazard

- Data for ingredients were not found or not sufficient for classification.

SECTION 12: Ecological information

12.1 Toxicity

Acute toxicity

- Data for ingredients not listed were not found or not sufficient for classification.

Calcium Oxide (CAS No. 001305-78-8)

-	Fish:	*Oncorhynchus mykiss*	LC50 (96-hour)	50.6 mg/L
-	Crustacea	*Daphnia magna*	EC50 (48-hour)	49.1 mg/L
-	Algae / Aquatic plants	*Pseudokirchnerella subcapitata*	EC50 (72-hour)	184.57 mg/L
-	Bacteria	Activated sludge	EC50 (3-hour)	300.4 mg/L

Oxalic Acid (CAS No. 000144-62-7)

-	Fish:	*Leuciscus idus melanotus*	LC50 (48-hour)	325 mg/L
-	Crustacea	*Daphnia magna*	EC50 (48-hour)	136.9 mg/L
-	Algae / Aquatic plants	*Microcystis aeruginosa*	Toxicity (8-day)	80 mg/L
-	Bacteria	*Pseudomonas putida*	Toxicity (16-hour)	1550 mg/L

Sulfamic Acid (CAS No. 005329-14-6)

-	Fish:	*Pimephales promelas*	LC50 (96-hour)	70.3 mg/L
-	Crustacea	*Daphnia magna*	EC50 (48-hour)	71.6 mg/L
-	Algae / Aquatic plants	*Desmodesmus subspicatus*	EC50 (72-hour)	33.8 mg/L
-	Bacteria	Activated sludge	EC50 (3-hour)	> 200 mg/L

Chronic toxicity

- Data for ingredients were not found or not sufficient for classification.

12.2 Persistence and degradability

- Data for ingredients were not found or not sufficient for classification.

12.3 Bioaccumulative potential

- Data for ingredients were not found or not sufficient for classification.

12.4 Mobility in soil

- Data for ingredients were not found or not sufficient for classification.

12.5 Results of PBT and vPvB assessment

- Data for ingredients were not found or not sufficient for classification.

12.6 Other adverse effects

- No additional data is available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Must be disposed of in accordance with local regulatory requirements.
- Sewer disposal is discouraged.
- Empty containers may contain hazardous residue and must be disposed accordingly.

SECTION 14: Transport information

- The transport information provided below conforms to the following:

  - UN Model Regulations
  - International Carriage of Dangerous Goods by Road (ADR)
  - International Carriage of Dangerous Goods by Rail (RID)
  - International Carriage of Dangerous Goods by Inland Waterways (ADN)
  - International Maritime Dangerous Goods (IMDG) Code
  - International Civil Aviation Organization (ICAO)Technical Instructions for the Safe Transport of Dangerous Goods by Air

14.1 UN number	3261
14.2 UN proper shipping name	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (SULFAMIC ACID)
14.3 Transport hazard class(es)	8
14.4 Packing group	III
14.5 Environmental hazards	None
14.6 Special precautions for user	None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Product is not offered nor intended to be transported in bulk quantities.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
The regulatory information provided below may not be comprehensive.

Canada

Controlled Products Regulation (CPR)

- This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Ingredient Disclosure List (IDL)

- All components of this mixture that are on the IDL above their specified concentration are disclosed in this SDS.

United States

EPCRA			CERCLA	RCRA	CAA	OSHA
Section 302 (EHS) TPQ (LB/KG)	Section 304 RQ (LB/KG)	Section 313	RQ (LB/KG)	P/U Codes	112(r) TQ (LB/KG)	Highly Hazardous Chemical
Calcium Oxide (CAS No. 001305-78-8)						
--	--	--	--	--	--	--
Oxalic Acid (CAS No. 000144-62-7)						
--	--	--	--	--	--	--
Sulfamic Acid (CAS No. 005329-14-6)						
--	--	--	--	--	--	--

15.2 Chemical safety assessment

- Not required.

SECTION 16: Other information

Revision history

Revision Number	Revision Date	Revision Description
1	21-APR-2013	Original MSDS.
2	3-MAR-2015	Initial SDS creation in conformance with OSHA hazard communication standard (29 CFR 1910.1200), UN Globally Harmonized System (GHS), and Regulation (EC) No. 1907/2006 (REACH).

Legend to abbreviations and acronyms used

- ACGIH American Conference of Governmental Industrial Hygienists
- CAA Clean Air Act
- CFR Code of Federal Regulations (US)

- CWA Clean Water Act
- EPCRA Emergency Planning and Community Right-to-Know Act
- IARC International Agency for Research on Cancer
- IBC Code International Bulk Chemical Code
- MARPOL Marine Pollution
- NIOSH National Institute for Occupational Safety and Health
- OSHA Occupational Safety and Health Administration (US)
- PBT Persistent Bioaccumulative and Toxic
- RCRA Resource Conservation and Recovery Act
- SARA Superfund Amendments and Reauthorization Act
- vPvB very Persistent and very Bioaccumulative

Key literature references and sources for data

- ECHA. Registered Substances Database.