

# SAFETY DATA SHEET

## NOVUS\* CE2651

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### 1. Identification

<b>Product identifier</b>	<b>NOVUS CE2651</b>
<b>Other means of identification</b>	Not available.
<b>Recommended use</b>	Flocculant
<b>Recommended restrictions</b>	None known.

#### Company/undertaking identification

GE Betz, Inc.  
4636 Somerton Road  
Trevose, PA 19053  
T 215 355 3300, F 215 953 5524

#### Emergency telephone

(800) 877 1940

### 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
<b>OSHA defined hazards</b>	Not classified.	

#### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.
<b>Precautionary statement</b>	
<b>Prevention</b>	Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Wear eye/face protection.
<b>Response</b>	If on skin: Wash with plenty of water/. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor/. Specific treatment (see on this label). If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of contents/container to approved local facility.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates (petroleum), hydrotreated light		64742-47-8	20 - 40
Ammonium chloride		12125-02-9	2.5 - 10
Poly(oxy-1,2-ethanediyl),alpha-tridecyl-omega-hydroxy-		24938-91-8	2.5 - 10

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

**Composition comments** Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

### 4. First-aid measures

<b>Inhalation</b>	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.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Take off contaminated clothing and wash before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. If ingestion of a large amount does occur, call a poison control center immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Dermatitis. Irritation of eyes and mucous membranes. Rash. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause an allergic skin reaction. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause redness and pain.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Alcohol resistant foam. Water fog. Dry chemical powder. Dry chemicals. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	Cool containers exposed to heat with water spray and remove container, if no risk is involved.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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## Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

## Environmental precautions

## 7. Handling and storage

### Precautions for safe handling

Do not get this material in contact with eyes. Avoid breathing mist or vapor. Avoid contact with skin. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Avoid contact with clothing. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.

### Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat and sources of ignition. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m <sup>3</sup>	

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Splash proof chemical goggles.

#### Skin protection

##### Hand protection

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

##### Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

#### Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

## 9. Physical and chemical properties

### Appearance

#### Color

White to off-white

#### Physical state

Emulsion

Odor	Slight hydrocarbon
Odor threshold	Not available.
pH in aqueous solution	5.1 (0.5% SOL.)
Melting point/freezing point	< 23 °F (< -5 °C)
Initial boiling point and boiling range	Not available.
Flash point	> 200 °F (> 93 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
<b>Upper/lower flammability or explosive limits</b>	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	1.02
Relative density temperature	70 °F (21 °C)
<b>Solubility(ies)</b>	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	600 cps
Viscosity temperature	70 °F (21 °C)
<b>Other information</b>	
Percent volatile	24.1 (ASTM 3960-93)
Pour point	< 28 °F (< -2 °C)
Specific gravity	1.02

## 10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Protect from freezing. None under normal conditions.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon and nitrogen evolved in fire.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Expected to be a low ingestion hazard. May cause slight gastrointestinal irritation.
<b>Inhalation</b>	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
<b>Skin contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact</b>	Causes serious eye damage.

**Symptoms related to the physical, chemical and toxicological characteristics**

Dermatitis. Rash. Irritation of eyes and mucous membranes. May cause redness and pain. May cause respiratory irritation. May cause an allergic skin reaction. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Information on toxicological effects****Acute toxicity**

Narcotic effects. May cause an allergic skin reaction. May cause respiratory irritation.

Product	Species	Test Results
NOVUS CE2651 (CAS Mixture)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 20 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Ammonium chloride (CAS 12125-02-9)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	1410 mg/kg

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 5.2 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

Poly(oxy-1,2-ethanediyl),alpha-tridecyl-omega-hydroxy- (CAS 24938-91-8)

<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation**

Causes skin irritation.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Respiratory or skin sensitization****Respiratory sensitization**

Not available.

**Skin sensitization**

May cause an allergic skin reaction.

**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Reproductive toxicity**

This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**

May cause respiratory irritation. Narcotic effects.

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<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met. May be harmful if swallowed and enters airways.
<b>Chronic effects</b>	Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results	
NOVUS CE2651 (CAS Mixture)	LC50	Fathead Minnow	17 mg/L, Static Acute Bioassay, 96 hour
	NOEL	Fathead Minnow	11.6 mg/L, Static Acute Bioassay, 96 hour
Crustacea	LC50	Daphnia magna	14.2 mg/L, Static Acute Bioassay, 48 hour
	NOEL	Daphnia magna	0.8 mg/L, Static Acute Bioassay, 48 hour
Other	LC50	Rainbow Trout	3.3 mg/L, Static Acute Bioassay, 96 hour
	NOEL	Rainbow Trout	2.5 mg/L, Static Acute Bioassay, 96 hour

\* Estimates for product may be based on additional component data not shown.

<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.
<b>Environmental fate</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
- COD (mgO <sub>2</sub> /g)	1150
- BOD 5 (mgO <sub>2</sub> /g)	24
- BOD 28 (mgO <sub>2</sub> /g)	220
- Closed Bottle Test (% Degradation in 28 days)	19
- Zahn-Wellens Test (% Degradation in 28 days)	0
- TOC (mg C/g)	312

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**  
Not regulated as dangerous goods.  
Some containers may be DOT exempt, please check BOL for exact container classification.

**IATA**  
Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Ammonium chloride (CAS 12125-02-9) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Acrylamide	79-06-1	5000		1000 lbs	10000 lbs

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Ammonium chloride	12125-02-9	2.5 - 10
Acrylamide	79-06-1	0 - 0.1
Potassium bromate	7758-01-2	0 - 0.1

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)** Hazardous substance

**Safe Drinking Water Act (SDWA)** Not regulated.

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**US state regulations** WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**US - Massachusetts RTK - Substance List**

Ammonium chloride (CAS 12125-02-9)  
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

**US - Pennsylvania RTK - Hazardous Substances**

Ammonium chloride (CAS 12125-02-9)  
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

**US - Rhode Island RTK**

Ammonium chloride (CAS 12125-02-9)

**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. New Jersey Worker and Community Right-to-Know Act**

Distillates (petroleum), hydrotreated light (CAS 64742-47-8) 10000 LBS

**US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Acrylamide (CAS 79-06-1) Listed: January 1, 1990  
Potassium bromate (CAS 7758-01-2) Listed: January 1, 1990

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

Acrylamide (CAS 79-06-1) Listed: February 25, 2011

**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

No ingredient listed.

**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

Acrylamide (CAS 79-06-1) Listed: February 25, 2011

**16. Other information, including date of preparation or last revision**

**Issue date** Dec-18-2014

**Revision date** Dec-18-2014

**Version #** 1.0

**List of abbreviations**  
CAS: Chemical Abstract Service Registration Number  
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.  
ACGIH: American Conference of Governmental Industrial Hygienists  
NOEL: No Observed Effect Level  
STEL: Short Term Exposure Limit  
LC50: Lethal Concentration, 50%  
TWA: Time Weighted Average  
BOD: Biochemical Oxygen Demand  
COD: Chemical Oxygen Demand  
TOC: Total Organic Carbon  
IATA: International Air Transport Association  
IMDG: International Maritime Dangerous Goods Code  
TLV: Threshold Limit Value  
LD50: Lethal Dose, 50%  
NFPA: National Fire Protection Association

**References:** No data available

**Disclaimer**  
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision Information**  
Toxicological Information: Toxicological Data  
GHS: Classification

**Prepared by** This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

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