

SAFETY DATA SHEET



SIGNATURE™ XTRA STRESSGARD®

Version 4.0 / USA
102000029598

1/12
Revision Date: 03/06/2024
Print Date: 03/07/2024

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name SIGNATURE™ XTRA STRESSGARD®
Product code (UVP) 81691088
SDS Number 102000029598
EPA Registration No. 432-1541

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

Use Fungicide
Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer CropScience LP
800 North Lindbergh Blvd.
St. Louis, MO 63167
USA
Responsible Department Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Carcinogenicity(Inhalation): Category 1B
Eye irritation: Category 2B
Reproductive toxicity: Category 1B

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Danger

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Hazard statements

May cause cancer by inhalation.
Causes eye irritation.
May damage fertility or the unborn child.

Precautionary statements

Wear protective gloves/ protective clothing/ eye protection/ face protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash thoroughly after handling.
IF exposed or concerned: Get medical advice/ attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Fosetyl-Aluminium	39148-24-8	60.0
Reaction product of naphthalene, propan-2-ol, sulfonated and neutralized by caustic soda	1322-93-6	8.7
Formic acid	64-18-6	1.8
Crystalline quartz (respirable)	14808-60-7	0.5
N-Methyl-2-pyrrolidone	872-50-4	0.3

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

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Ingestion Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms The following symptoms may occur:, Skin, eye and mucous membrane irritation

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or mixture In the event of fire the following may be released:, Carbon monoxide (CO), Nitrogen oxides (NOx), Oxides of phosphorus

Advice for firefighters

Special protective equipment for firefighters In the event of fire and/or explosion do not breathe fumes. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Specific hazards from the substance or mixture which can increase the fire

Flash point Not applicable

Auto-ignition temperature No data available

Lower explosion limit Not applicable

Upper explosion limit Not applicable

Explosivity Not explosive
Regulation (EC) No. 440/2008, Annex, A.14

Dust explosion class No data available

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation. Avoid dust formation.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Keep away from direct sunlight.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Fosetyl-Aluminium	39148-24-8	5 mg/m ³ (TWA)		OES BCS*
Formic acid	64-18-6	9 mg/m ³ /5 ppm	1989	OSHA Z1A

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		(TWA)		
Formic acid	64-18-6	5 ppm (TWA)	2008	ACGIH
Formic acid	64-18-6	10 ppm (STEL)	2008	ACGIH
Formic acid	64-18-6	9 mg/m ³ /5 ppm (REL)	2005	NIOSH
Formic acid	64-18-6	9 mg/m ³ /5 ppm (PEL)	02 2006	OSHA Z1
Formic acid	64-18-6	19 mg/m ³ /10 ppm (STEL)	09 2006	US CA OEL
Formic acid	64-18-6	9 mg/m ³ /5 ppm (TWA PEL)	09 2006	US CA OEL
Formic acid	64-18-6	9 mg/m ³ /5 ppm (TWA)	06 2008	TN OEL
Formic acid	64-18-6	5 ppm (TLV)		OES BCS*
Crystalline quartz (respirable) (Respirable.)	14808-60-7	2.4millions of particles per cubic foot of air (TWA)	2000	Z3
Crystalline quartz (respirable) (Respirable.)	14808-60-7	0.1 mg/m ³ (TWA)	2000	Z3
Crystalline quartz (respirable)	14808-60-7	0.05 mg/m ³ (TWA)	03 2016	OSHA
Crystalline quartz (respirable)	14808-60-7	0.025 mg/m ³ (OSHA_ACT)	03 2016	OSHA
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.05 mg/m ³ (PEL)	03 2016	OSHA Z1
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.05 mg/m ³ (TWA PEL)	10 2016	US CA OEL
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.05 mg/m ³ (REL)	2016	NIOSH
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.050 mg/m ³ (TWA)	01 2019	TN OEL
Crystalline quartz (respirable) (Respirable fraction.)	14808-60-7	0.025 mg/m ³ (TWA)	01 2022	ACGIH

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N-Methyl-2-pyrrolidone	872-50-4	4 mg/m ³ /1 ppm (TWA PEL)	10 2014	US CA OEL
N-Methyl-2-pyrrolidone	872-50-4	120 mg/m ³ /30 ppm (STEL)	2021	WEEL
N-Methyl-2-pyrrolidone	872-50-4	60 mg/m ³ /15 ppm (TWA)	2021	WEEL
N-Methyl-2-pyrrolidone	872-50-4	19 ppm (TWA)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Biological occupational exposure limits

Components	CAS-No.	Parameters	Biological specimen	Sampling time	Conc.	Basis
N-Methyl-2-pyrrolidone	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	Sampling time: End of shift.	100 mg/l	ACGIH BEI

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

Eye protection

Tightly fitting safety goggles

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	water-dispersible granules
Colour	green
Odour	slight, acid-like
Odour Threshold	No data available
pH	3.0 - 5.0 (10 %) (23 °C) (deionized water)

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Melting point/range	No data available
Boiling Point	Not applicable
Flash point	Not applicable
Flammability	The product is not highly flammable.
Auto-ignition temperature	No data available
Thermal decomposition	No data available
Ignition temperature	The product is not self-ignitable.
Minimum ignition energy	No data available
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	Not applicable
Lower explosion limit	Not applicable
Dust explosion class	No data available
Vapour pressure	No data available
Evaporation rate	Not applicable
Relative vapour density	No data available
Relative density	No data available
Density	No data available
Bulk density	0.512 - 0.705 g/ml (loose)
Water solubility	dispersible
Partition coefficient: n-octanol/water	Fosetyl Aluminium: log Pow: -2.1
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive Regulation (EC) No. 440/2008, Annex, A.14
Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

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Reactivity	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Exposure to moisture. Extremes of temperature and direct sunlight.
Incompatible materials	Strong oxidizing agents, Strong acids, Strong bases
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Skin contact, Ingestion, Inhalation
Immediate Effects	
Eye	May cause temporary eye irritation.
Skin	Not expected to produce significant adverse effects when recommended use instructions are followed.
Ingestion	May be harmful if swallowed.
Inhalation	Not expected to produce significant adverse effects when recommended use instructions are followed.
Information on toxicological effects	
Acute oral toxicity	LD50 (female Rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (male/female combined Rat) > 5.22 mg/l Exposure time: 4 h
Acute dermal toxicity	LD50 (male/female combined Rat) > 5,000 mg/kg
Skin corrosion/irritation	No skin irritation (Rabbit)
Serious eye damage/eye irritation	Moderate eye irritation. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig)

Assessment STOT Specific target organ toxicity – single exposure

Fosetyl Aluminium: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Fosetyl Aluminium did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Fosetyl Aluminium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

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Assessment carcinogenicity

Fosetyl Aluminium was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

Crystalline quartz (respirable)	14808-60-7	Group A2
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NTP

Crystalline quartz (respirable)	14808-60-7
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IARC

Crystalline quartz (respirable)	14808-60-7	Overall evaluation: 1 OCGEN
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Assessment toxicity to reproduction

Fosetyl Aluminium did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Fosetyl Aluminium did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

The non-acute information pertains to the active ingredient(s).
No further toxicological information is available.
The toxicological data refer to a similar formulation.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) > 500 mg/l Exposure time: 96 h
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Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) > 1,000 mg/l Exposure time: 48 h
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Toxicity to aquatic plants	ErC50 (Desmodesmus subspicatus (green algae)) 43.5 mg/l Growth rate; Exposure time: 72 h
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Biodegradability	Fosetyl Aluminium: rapidly biodegradable
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Koc	Fosetyl Aluminium: Koc: 0.1
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Bioaccumulation	Fosetyl Aluminium: Does not bioaccumulate.
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Mobility in soil	Fosetyl Aluminium: Highly mobile in soils
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Results of PBT and vPvB assessment

PBT and vPvB assessment	Fosetyl Aluminium: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
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Additional ecological information	The ecological data refer to a similar formulation.
Environmental precautions	Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label. Do not allow to get into surface water, drains and ground water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose in accordance with all local, state/provincial and federal regulations.
Contaminated packaging	Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

SECTION 15: REGULATORY INFORMATION

EPA Registration No.	432-1541
US Federal Regulations	
TSCA list	
Reaction product of naphthalene, propan-2-ol, sulfonated and neutralized by caustic soda	1322-93-6
Bentonite	1302-78-9
Formic acid	64-18-6
Sodium acetate – anhydrous	127-09-3
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)	
No export notification needs to be made.	
SARA Title III - Section 302 - Notification and Information	
Not applicable.	
SARA Title III - Section 313 - Toxic Chemical Release Reporting	

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Yes

US States Regulatory Reporting CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Crystalline quartz (respirable)	14808-60-7	Carcinogenic.
N-Methyl-2-pyrrolidone	872-50-4	Developmental toxin.
Cristobalite	14464-46-1	Carcinogenic.

US State Right-To-Know Ingredients

Formic acid	64-18-6	CA, CT, IL, MN, NJ, RI
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Environmental CERCLA

Yes

Formic acid	64-18-6
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Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed.
Causes moderate eye irritation.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer

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IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 0 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Fourth Edition Ratings Guide)

Health - 1* Flammability - 0 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard,
* = chronic health hazard

Reason for Revision: The following sections have been revised: Section 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 8: Exposure Controls / Personal Protection. Reviewed and updated for general editorial purposes.

Revision Date: 03/06/2024

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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