



BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 05/01/2024

Revision date: 07/01/2024

Version: 1.3

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : BEST 46-0-0 with UFLEXX
Product code : 96005

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Fertilizer

1.3. Supplier

JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 2B H320 Causes eye irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Signal word (GHS US) : Warning
Hazard statements (GHS US) : H320 - Causes eye irritation
Precautionary statements (GHS US) : P264 - Wash hands, forearms and face thoroughly after handling.
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 which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
urea (57-13-6)	(CAS-No.) 57-13-6		Eye Irrit. 2B, H320
Dicyandiamide	(CAS-No.) 461-58-5		Eye Irrit. 2B, H320 STOT SE 3, H335
diatomaceous earth	(CAS-No.) 61790-53-2		Eye Irrit. 2B, H320 STOT SE 3, H335
1-methyl-2-pyrrolidone	(CAS-No.) 872-50-4		Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
N-(n-butyl)-thiophosphonic triamide	(CAS-No.) 94317-64-3		Eye Irrit. 2A, H319 Skin Sens. 1B, H317 Repr. 2, H361 STOT SE 3, H335

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.
- Symptoms/effects after eye contact : Causes eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
- Incompatible products : Strong bases. Strong acids.

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BEST 46-0-0 with UFLEXX
No additional information available
Dicyandiamide (461-58-5)
No additional information available
1-methyl-2-pyrrolidone (872-50-4)
No additional information available
N-(n-butyl)-thiophosphonic triamide (94317-64-3)
No additional information available
diatomaceous earth (61790-53-2)
No additional information available
urea (57-13-6) (57-13-6)
No additional information available

8.2. Appropriate engineering controls

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Wear appropriate mask

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Turquoise Blue granules.
Color	: Turquoise Blue
Odor	: No data available on odour
Odor threshold	: No data available
pH	: 7.2
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Relative density	: No data available
Solubility	: Soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: 135 °C
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high temperatures. Direct sunlight.

10.5. Incompatible materials

Acids. Oxidizing agent. reducing agents. Strong bases.

10.6. Hazardous decomposition products

Thermal decomposition will produce oxides of carbon, nitrogen, and sulfur. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Dicyandiamide (461-58-5)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 0.26 mg/l/4h (Rat)

1-methyl-2-pyrrolidone (872-50-4)	
LD50 oral rat	3914 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 4150 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	7000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	8000 mg/kg (Rabbit; Literature study; Equivalent or similar to OECD 402; >5000 mg/kg bodyweight; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	> 5.1 mg/l/4h (Rat; Experimental value)

N-(n-butyl)-thiophosphonic triamide (94317-64-3)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg

urea (57-13-6) (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 14300 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 3200 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit; Literature study)

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin corrosion/irritation	: Not classified pH: 7.2
Serious eye damage/irritation	: Causes eye irritation. pH: 7.2
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

diatomaceous earth (61790-53-2)

IARC group	3 - Not classifiable
------------	----------------------

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Dicyandiamide (461-58-5)

Specific target organ toxicity – single exposure	May cause respiratory irritation.
--	-----------------------------------

1-methyl-2-pyrrolidone (872-50-4)

Specific target organ toxicity – single exposure	May cause respiratory irritation.
--	-----------------------------------

N-(n-butyl)-thiophosphonic triamide (94317-64-3)

Specific target organ toxicity – single exposure	May cause respiratory irritation.
--	-----------------------------------

diatomaceous earth (61790-53-2)

Specific target organ toxicity – single exposure	May cause respiratory irritation.
--	-----------------------------------

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects after eye contact : Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Dicyandiamide (461-58-5)

LC50 fish 1	7700 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Cool water)
EC50 Daphnia 1	3177 mg/l (48 h; Daphnia magna)
LC50 fish 2	7900 mg/l (96 h; Pisces)

1-methyl-2-pyrrolidone (872-50-4)

LC50 fish 1	3048 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Cool water)
EC50 Daphnia 1	4897 mg/l (48 h; Daphnia magna)
LC50 fish 2	832 mg/l (96 h; Lepomis macrochirus; Warm water)
EC50 Daphnia 2	4655 mg/l (Gammarus sp.)
Threshold limit algae 1	> 500 mg/l (Scenedesmus subspicatus)
Threshold limit algae 2	600.5 mg/l (72 h; Desmodesmus subspicatus; Growth rate)

urea (57-13-6) (57-13-6)

LC50 fish 1	> 6810 mg/l (96 h; Leuciscus idus; Nominal concentration)
EC50 Daphnia 1	> 10000 mg/l (48 h; Daphnia magna; Nominal concentration)
LC50 fish 2	17500 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 2	> 10000 mg/l (24 h; Daphnia magna)
TLM fish 1	17500 ppm (96 h; Poecilia reticulata)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

urea (57-13-6) (57-13-6)	
Threshold limit other aquatic organisms 2	> 10000 mg/l (Pseudomonas putida)
Threshold limit algae 1	> 10000 mg/l (168 h; Scenedesmus quadricauda; Growth rate)
Threshold limit algae 2	47 mg/l (192 h; Microcystis aeruginosa; Growth rate)

12.2. Persistence and degradability

BEST 46-0-0 with UFLEXX	
Persistence and degradability	Not established.
Dicyandiamide (461-58-5)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Photodegradation in the air. Not established.
BOD (% of ThOD)	0.022 % ThOD
1-methyl-2-pyrrolidone (872-50-4)	
Persistence and degradability	Readily biodegradable in water. Inherently biodegradable. Biodegradable in the soil. Photodegradation in the air. Not established.
Biochemical oxygen demand (BOD)	1.07 g O ₂ /g substance
Chemical oxygen demand (COD)	1.56 g O ₂ /g substance
ThOD	1.9 g O ₂ /g substance
BOD (% of ThOD)	0.56 % ThOD
N-(n-butyl)-thiophosphonic triamide (94317-64-3)	
Persistence and degradability	Not established.
diatomaceous earth (61790-53-2)	
Persistence and degradability	Biodegradability: not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
urea (57-13-6) (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Not established.
ThOD	0.27 g O ₂ /g substance

12.3. Bioaccumulative potential

BEST 46-0-0 with UFLEXX	
Bioaccumulative potential	Not established.
Dicyandiamide (461-58-5)	
BCF fish 1	< 3.1 (Cyprinus carpio; Test duration: 6 weeks)
Partition coefficient n-octanol/water (Log Pow)	-1.5 (Experimental value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
1-methyl-2-pyrrolidone (872-50-4)	
Partition coefficient n-octanol/water (Log Pow)	-0.73 – -0.46 (Experimental value)
Bioaccumulative potential	Not bioaccumulative. Not established.
N-(n-butyl)-thiophosphonic triamide (94317-64-3)	
Bioaccumulative potential	Not established.
diatomaceous earth (61790-53-2)	
Bioaccumulative potential	No bioaccumulation data available. Not established.
urea (57-13-6) (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Partition coefficient n-octanol/water (Log Pow)	< -1.73 (Experimental value; EU Method A.8: Partition Coefficient)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

12.4. Mobility in soil

1-methyl-2-pyrrolidone (872-50-4)	
Surface tension	0.407 N/m

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.5. Other adverse effects

Other information : Avoid unintentional release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid unintentional release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Other information : No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Air transport

SECTION 15: Regulatory information

15.1. US Federal regulations

BEST 46-0-0 with UFLEXX

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S

1-methyl-2-pyrrolidone	CAS-No. 872-50-4	%
N-(n-butyl)-thiophosphonic triamide	CAS-No. 94317-64-3	%

1-methyl-2-pyrrolidone (872-50-4)

EPA Labeling Requirements	R - R - indicates a substance that is the subject of a TSCA section 6 risk management rule.
---------------------------	---

N-(n-butyl)-thiophosphonic triamide (94317-64-3)

EPA Labeling Requirements	PMN - PMN - indicates a commenced PMN substance. S - S - indicates a substance that is identified in a final Significant New Use Rule.
---------------------------	---

15.2. International regulations

CANADA

Dicyandiamide (461-58-5)

Listed on the Canadian DSL (Domestic Substances List)

1-methyl-2-pyrrolidone (872-50-4)

Listed on the Canadian DSL (Domestic Substances List)

N-(n-butyl)-thiophosphonic triamide (94317-64-3)

Listed on the Canadian DSL (Domestic Substances List)

diatomaceous earth (61790-53-2)

Listed on the Canadian NDSL (Non-Domestic Substances List)

urea (57-13-6) (57-13-6)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

BEST 46-0-0 with UFLEXX

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

⚠ WARNING: This product can expose you to 1-methyl-2-pyrrolidone, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Component	State or local regulations
1-methyl-2-pyrrolidone(872-50-4)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
diatomaceous earth(61790-53-2)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 07/01/2024

Other information : None.

Full text of H-phrases:

H227	Combustible liquid
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H320	Causes eye irritation
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.