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Version: 9.2
Effective date: 09/10/2019
Previous Date: 27/04/2018

SAFETY DATA SHEET

CORRSHIELD NT4201 (IronShield NT 200)

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

1.1. Product identifier

Trade name or designation of the mixture CORRSHIELD NT4201 (IronShield NT 200)

Version number 9.2

Revision date 09/10/2019

Supersedes date 27/04/2018

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

Identified uses Water-based corrosion inhibitor

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

JV Process and Water Chemicals LLC

Address: Street V. Kadirov 10, Chirchik city,
Tashkent Region, Republic of Uzbekistan, 111727

Tel: +99871 209 10 40

Email address: info@pwch.uz

www.pwch.uz

1.4. Emergency telephone number

Multilingual emergency number (24/7)

Street V. Kadirov 10, Chirchik city,
Tashkent Region,
Republic of Uzbekistan, 111727

Tel: +99871 209 10 40

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Corrosive to metals Category 1 H290 - May be corrosive to metals.

Health hazards

Acute toxicity, oral Category 4 H302 - Harmful if swallowed.

Skin corrosion/irritation Category 1 H314 - Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Category 1 H318 - Causes serious eye damage.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard Category 1 H400 - Very toxic to aquatic life.

2.2. Label elements



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Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Sodium hydroxide, Sodium nitrite

Hazard pictograms



Signal word Danger

Hazard statements

- H290 May be corrosive to metals.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H400 Very toxic to aquatic life.

Precautionary statements

Prevention

- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTRE/doctor.

Storage Not available.

Disposal Not available.

Supplemental label information None.

2.3. Other hazards The classification as corrosive is due to the extreme pH.

SECTION 3: Composition/information on ingredients

Mixtures

Chemical description Aqueous alkaline solution of inorganic salts

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Sodium nitrite	> 25	7632-00-0 231-555-9	01-2119471836-27	007-010-00-4	
Classification:	Ox. Sol. 3;H272, Acute Tox. 3;H301, Eye Irrit. 2;H319, Aquatic Acute 1;H400				
Sodium hydroxide	0,5 - < 2	1310-73-2 215-185-5	01-2119457892-27	011-002-00-6	
Classification:	Met. Corr. 1;H290, Skin Corr. 1A;H314				

The classification of the above substance(s) is given, including the hazard class, category code and hazard statements which are assigned in accordance with their physicochemical, health and environmental hazards. Please refer to section 16 where the full text of each relevant H-statement is listed.

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.
- Skin contact** Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately.
- Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.



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Ingestion	Rinse mouth. Do not give anything to eat or drink. Do not induce vomiting. Call a physician or poison control centre immediately.
4.2. Most important symptoms and effects, both acute and delayed	Corrosive effects.
4.3. Indication of any immediate medical attention and special treatment needed	Not available.

SECTION 5: Firefighting measures

5.1. Extinguishing media	
Suitable extinguishing media	Water fog.
Unsuitable extinguishing media	Carbon dioxide (CO2).
5.2. Special hazards arising from the substance or mixture	Oxides of nitrogen evolved in fire.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self contained breathing apparatus. (CEN : EN 137) Protective clothing (CEN : EN 469) Protective gloves (CEN : EN 659) Helmet (CEN : EN 443)
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials. Prevent spillage and fire-fighting water from entering in public sewers or the immediate environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Wear protective clothing, gloves and safety goggles.
For emergency responders	Use personal protection recommended in Section 8 of the SDS.
6.2. Environmental precautions	Prevent from entering sewers or the immediate environment. Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point.
6.3. Methods and material for containment and cleaning up	Absorb onto inert material and dispose of according to Hazardous Waste Regulations. Remove small spills with plenty of water.
6.4. Reference to other sections	Please refer also to section no. 8 'Exposure controls' for further information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Avoid all contact with reducing agents, oils, greases, organics and acids. Do not allow to dry.
7.2. Conditions for safe storage, including any incompatibilities	Store containers closed when not in use.
7.3. Specific end use(s)	Only for professional and industrial users
Shelf life	720 days

SECTION 8: Exposure controls/personal protection

8.1. Control parameters		
Occupational exposure limits		
UK. EH40 Workplace Exposure Limits (WELs)		
Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m3



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

Recommended monitoring procedures Not available.

Derived no effect levels (DNELs)

Workers

Components	Value	Assessment factor	Notes
Sodium hydroxide (CAS 1310-73-2)			
Long-term, Local, Inhalation	1 mg/m ³	1	
Short-term, Local, Dermal	2 mg/kg/day		
Short-term, Local, Inhalation	2 mg/m ³		
Sodium nitrite (CAS 7632-00-0)			
Long-term, Systemic, Inhalation	2 mg/m ³	500	
Short-term, Systemic, Inhalation	2 mg/m ³	500	

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Sodium nitrite (CAS 7632-00-0)			
Freshwater	5,4 µg/l	100	
Intermittent releases	5,4 µg/l	100	
Marine water	6,16 µg/l	1000	
Sediment (freshwater)	19,5 µg/kg		
Sediment (marine water)	22,3 µg/kg		
Soil	0,000733 mg/kg		
STP	21 mg/l	10	

8.2. Exposure controls

Appropriate engineering controls Adequate ventilation to maintain air contaminants below exposure limits.
 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.
 Face shield.
 CEN : EN 166

Skin protection

- Hand protection Gauntlet type neoprene gloves (Protection against unintentional short-term contact)
 Gauntlet type nitrile gloves (Protection against unintentional short-term contact)
 Coating thickness: 0.7 mm
 Penetration time: > 480 min
 CEN : EN 374-1/2/3/4; EN 420

- Other Chemical resistant apron.
 CEN : EN ISO 13688; EN ISO 6530; EN ISO 6529; EN 14605

Respiratory protection In case of insufficient ventilation, use a breathing mask with filter type: B2-P2
 CEN : EN 140; EN 14387

Thermal hazards Not available.

Environmental exposure controls Prevent from entering in public sewers or the immediate environment.
 Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Colour Colourless to yellow

Physical state Liquid

Odour Mild

Odour threshold Not available.

pH (concentrated product) 13,1

pH in aqueous solution 12 (5% SOL.)

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Melting point/freezing point	-17 °C
Initial boiling point and boiling range	104 °C
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	18 mm Hg
Vapour pressure temp.	21 °C
Vapour density	< 1 (Air = 1)
Relative density	1,23
Relative density temperature	21 °C
Solubility	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	14 cps
Viscosity temperature	21 °C
Explosive properties	Not available.
Oxidising properties	Not available.
9.2. Other information	
Pour point	-14 °C
Shelf life	720 days
VOC	0 % (Estimated)

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Not applicable.
10.4. Conditions to avoid	Store in a dry place.
10.5. Incompatible materials	Avoid contact with strong acids and oxidisers. Avoid all contact with reducing agents, oils, greases, organics and acids.
10.6. Hazardous decomposition products	Oxides of nitrogen evolved in fire.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Product	Test Results
CORRSHIELD NT4201 (IronShield NT 200) (Mixture)	Acute Dermal LD50 Rabbit: > 5000 mg/kg (Calculated according to GHS additivity formula) Acute Oral LD50 Rat: 593 mg/kg (Calculated according to GHS additivity formula)



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Components	Test Results
Sodium hydroxide (1310-73-2)	Acute Dermal LD50 Rabbit: 1350 mg/kg Acute Oral LD50 Rabbit: > 500 mg/kg
Sodium nitrite (7632-00-0)	Acute Oral LD50 Rat: 180 mg/kg
Acute toxicity	Harmful if swallowed.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/irritation	Causes serious eye damage.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Information on likely routes of exposure	
Ingestion	Causes digestive tract burns. Harmful if swallowed. Ingestion of large amounts may produce gastrointestinal disturbances including irritation, nausea, and diarrhoea.
Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Symptoms	Not available.
Aspiration hazard	Based on available data, the classification criteria are not met.
Mixture versus substance information	None known.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity

Product	Species	Test Results	
CORRSHIELD NT4201 (IronShield NT 200) (CAS Mixture)			
Aquatic			
Crustacea	LC50	Daphnia magna	648 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	125 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Fathead minnow	840 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Fathead minnow	500 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)

Components	Species	Test Results	
Sodium nitrite (CAS 7632-00-0)			
Aquatic			
Fish	LC50	Fish	0,56 - 1,78 mg/l, 96 hour

12.2. Persistence and degradability

- COD (mgO2/g) 77,2

Material name: CORRSHIELD NT4201 (IronShield NT 200)



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- TOC (mg C/g)	3,5
12.3. Bioaccumulative potential	Not available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Nutrients: N= 55,3 mg/g

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contaminated packaging	According to Hazardous Waste Regulations. EWC (European Waste Code) recommendation : 15 01 10 15 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified. 15 01 Packaging (including separately collected municipal packaging waste). 15 01 10 Packaging containing residues of or contaminated by dangerous substances. Depending on the origin and state of the waste, other EWC numbers may be applicable too.
Disposal methods/information	According to Hazardous Waste Regulations. EWC (European Waste Code) recommendation : 16 03 03 16 Wastes not otherwise specified in the list. 16 03 Off-specification batches and unused products. 16 03 03 Inorganic wastes containing dangerous substances. Depending on the origin and state of the waste, other EWC numbers may be applicable too.

SECTION 14: Transport information

ADR

14.1. UN number	UN3266
14.2. UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Sodium hydroxide, Sodium nitrite, mixture)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
Tunnel restriction code	(E)
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Not available.

RID

14.1. UN number	UN3266
14.2. UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Sodium hydroxide, Sodium nitrite, mixture)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Not available.

ADN

14.1. UN number	UN3266
14.2. UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Sodium hydroxide, Sodium nitrite, mixture)



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14.3. Transport hazard class(es)

Class 8
Subsidiary risk -

14.4. Packing group II

14.5. Environmental hazards Yes

14.6. Special precautions for user Not available.

IATA

14.1. UN number UN3266

14.2. UN proper shipping name Corrosive liquid, basic, inorganic, n.o.s. (Sodium hydroxide, Sodium nitrite, mixture)

14.3. Transport hazard class(es)

Class 8
Subsidiary risk -

14.4. Packing group II

14.5. Environmental hazards Yes

ERG Code Not available.

14.6. Special precautions for user Not available.

IMDG

14.1. UN number UN3266

14.2. UN proper shipping name Corrosive liquid, basic, inorganic, n.o.s. (Sodium hydroxide, Sodium nitrite, mixture)

14.3. Transport hazard class(es)

Class 8
Subsidiary risk -

14.4. Packing group II

14.5. Environmental hazards

Marine pollutant Yes

EmS F-A, S-B

14.6. Special precautions for user Not available.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code This substance/mixture is not intended to be transported in bulk.

ADN; ADR; IATA; IMDG; RID





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Marine pollutant



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**
Not listed.
- Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**
Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**
Not listed.
- Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**
Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**
Not listed.

Authorisations

- Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**
Not listed.

Restrictions on use

- Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**
Not listed.
- Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**
Not listed.

Other EU regulations

- Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**
Sodium nitrite (CAS 7632-00-0)

National regulations Not available.

15.2. Chemical safety assessment Not available.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 141186
 Category Code(s):
 G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products – nonfood contact

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes



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Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European List of Notified Chemical Substances (ELINCS)	No

*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).

SECTION 16: Other information

List of abbreviations

COD: Chemical Oxygen Demand
EC-No: European Commission Number
IATA: International Air Transport Association
CAS: Chemical Abstract Service.
CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
CEN: European Committee for Standardization (Comité Européen de Normalisation).
TWA: Time Weighted Average.
STEL: Short-term Exposure Limit.
LD50: Lethal Dose 50%.
LC50: Lethal Concentration 50%.
EC50: Effective Concentration 50%.
NOEL: No observed effect level.
BOD: Biochemical oxygen demand.
TOC: Total Organic Carbon.
ADR: European agreement concerning the international carriage of dangerous goods by road (Accord européen relatif transport des marchandises dangereuses par route).
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures).
IMDG Code: International Maritime Dangerous Goods Code.
RID: Regulations concerning the international carriage of dangerous goods by rail (Règlement International concernant le transport de marchandises dangereuses par chemin de fer).
Safety data sheets of raw materials.

References

Information on evaluation method leading to the classification of mixture

The physical, health and environmental hazards of this mixture are assessed by applying the classification criteria for each hazard class or differentiation in Parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008 (CLP).

Full text of any H-statements not written out in full under Sections 2 to 15

H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Training information

Provide training on safe handling while considering the type of application and exposure scenarios.

Based on EC Directive / Regulations

(EC) No 1907/2006 (REACH)
(EC) No 1272/2008
(EU) No 1357/2014
(EU) 2015/830

Further information

Correction in Section: 1,8,11,14