

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name

Rh, Ru Pills

Product no.

-

REACH registration number

Not applicable

Other means of identification

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

Relevant identified uses of the substance or mixture

Use as an intermediate in metal manufacturing.

Use in closed, continuous process with occasional controlled exposure (PROC 2) (22, 8b 2008/533: 55)

Industrial uses: Uses of substances as such or in preparations* at industrial sites (SU 3) (14. 2008/533: 244)

Uses advised against

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1.3. Details of the supplier of the safety data sheet

Company and addressBoliden Commercial
Box 750
SE-101 35 Stockholm
Sweden

Tel +46 8 610 15 00

Fax +46 8 31 55 45

Contact person**E-mail**

info.market@boliden.com

SDS date

09-06-2020

SDS Version

1.1

1.4. Emergency telephone number

999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service). See section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Repr. 1A; H360

Repr.; H362

Skin Sens. 1B; H317

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)

According to EC-Regulation 1907/2006 (REACH)



Signal word

Danger!

Hazard statement(s)

May damage fertility or the unborn child. (H360)

May cause harm to breast-fed children. (362)

May cause an allergic skin reaction. (H317)

Safety statement(s)

General

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Prevention

Obtain special instructions before use. (P201).

Do not handle until all safety precautions have been read and understood. (P202).

Use personal protective equipment as required. (P281).

Response

IF exposed or concerned: Get medical advice/attention. (P308+P313).

Storage

Store locked up. (P405).

Disposal

Dispose of contents/container to an approved waste disposal plant. (P501).

Identity of the substances primarily responsible for the major health hazards

Tellurium

2.3. Other hazards

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Additional labelling

-

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1. Substances

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3.2. Mixtures

NAME: silver
 IDENTIFICATION NOS.: CAS-no: 7440-22-4 EC-no: 231-131-3 REACH-no: 01-2119555669-21-XXXX
 CONTENT: 20%
 CLP CLASSIFICATION: NA

NAME: ruthenium
 IDENTIFICATION NOS.: CAS-no: 7440-18-8 EC-no: 231-127-1
 CONTENT: 20%
 CLP CLASSIFICATION: NA

NAME: Tellurium
 IDENTIFICATION NOS.: CAS-no: 13494-80-9 EC-no: 236-813-4
 CONTENT: 15%
 CLP CLASSIFICATION: Acute Tox. 4, Skin Sens. 1B, Repr. 1B, Aquatic Chronic 4
 H317, H332, H360, H413

NAME: iridium
 IDENTIFICATION NOS.: CAS-no: 7439-88-5 EC-no: 231-095-9
 CONTENT: 12%
 CLP CLASSIFICATION: NA

NAME: rhenium
 IDENTIFICATION NOS.: CAS-no: 7440-15-5 EC-no: 231-124-5
 CONTENT: 7,1%
 CLP CLASSIFICATION: NA

NAME: copper

According to EC-Regulation 1907/2006 (REACH)

IDENTIFICATION NOS.:	CAS-no: 7440-50-8 EC-no: 231-159-6
CONTENT:	6,4%
CLP CLASSIFICATION:	NA
NAME:	selenium
IDENTIFICATION NOS.:	CAS-no:7782-49-2EC-no:231-957-4
CONTENT:	0,7%
CLP CLASSIFICATION:	Acute Tox. 3, STOT RE 2, Aquatic Chronic 4 H301, H331, H373, H413
NAME:	lead
IDENTIFICATION NOS.:	CAS-no: 7439-92-1 EC-no: 231-100-4
CONTENT:	0,6%
CLP CLASSIFICATION:	NA

(*) See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other informations

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Seek fresh air in case of inhalation of dust or fumes from overheated or smelted material. Seek medical advice if respiratory problems arise.

Skin contact

Skin that has come in contact with the material must be washed thoroughly with water and soap. Silver in form of finely divided dust may cause discoloration in contact with skin.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

If swallowed, no specific intervention is indicated, as this material is not likely to be hazardous by ingestion. However if irritation or discomfort occurs, obtain medical advice.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to destroy it.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned:
Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

According to EC-Regulation 1907/2006 (REACH)

Use fire-extinguishing media appropriate for surrounding materials e.g. dry powder or carbon dioxide.
DO NOT USE Water, because it expands explosively in contact with molten/liquid metal.

5.2. Special hazards arising from the substance or mixture

Not flammable. Fine dust or powder may be flammable or explosive in high concentrations exposed to heat, flame or other sources of ignition.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances. Avoid inhalation of vapours from waste material.

6.2. Environmental precautions

Do not let product enter water sources or drainage system.

6.3. Methods and material for containment and cleaning up

No special procedures are required for cleanup of spill of this material. Recover the product and place it in suitable container for reuse.

6.4. Reference to other sections

See section 13 with regard to the handling of waste. See section 8 for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

See section 8 for information on personal protection. Avoid direct contact with the product.
Avoid inhalation of fumes from heated/molten material. Avoid generation of dust.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original.

Storage temperature

No data available.

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

lead

Long-term exposure limit (8-hour TWA reference period): - ppm | 0,15 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | - mg/m³

Comments: Lead and inorganic compounds (as Pb)

selenium

Long-term exposure limit (8-hour TWA reference period): - ppm | 0,1 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | - mg/m³

Comments: Se and compounds, except hydrogen selenide (as Se)

copper

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.2/1 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | -/2 mg/m³

Comments: Fume/dust

Tellurium

Long-term exposure limit (8-hour TWA reference period): - ppm | 0,1 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | - mg/m³

Comments: Tellurium & compounds, except H₂Te, (as Te)

silver

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.1 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | - mg/m³

According to EC-Regulation 1907/2006 (REACH)

DNEL / PNEC

DNEL (lead): 40 µg/dL blood - Duration: Long term – Systemic effects - Workers - Remarks: Adult neurological function.
 DNEL (lead): 10 µg/dL blood - Duration: Long term – Systemic effects - Workers - Remarks: Developmental effect on foetus of pregnant women.

PNEC (lead): 3.1 µg Pb/L (dissolved) - Exposure: Freshwater
 PNEC (lead): 3.5 µg Pb/L (dissolved) - Exposure: Marine water
 PNEC (lead): 174.0 mg Pb/kg dw - Exposure: Freshwater sediment
 PNEC (lead): 41.0 mg Pb/kg dw (bioavailability correction) - Exposure: Freshwater sediment
 PNEC (lead): 164.0 mg Pb/kg dw - Exposure: Marine water sediment
 PNEC (lead): 212.0 mg Pb/kg dw - Exposure: Soil
 PNEC (lead): 0.1 mg Pb/L - Exposure: Sewage Treatment Plant

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values. Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Keep damming materials near the workplace. If possible collect spillage during work.

Individual protection measures, such as personal protective equipment



Generally

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

Use appropriate respiratory protection when airborne exposure limits are exceeded. Recommended filter type P3.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Use protective gloves.

Eye protection

Wear safety glasses, when generating particles or dust.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm ³)
Solid, granules	-	None	-	-	-
Phase changes					
Melting point (°C)		Boiling point (°C)		Vapour pressure (mm Hg)	
-				-	
Data on fire and explosion hazards					
Flashpoint (°C)		Ignition (°C)		Self ignition (°C)	

According to EC-Regulation 1907/2006 (REACH)

-	-
Explosion limits (Vol %)	Oxidizing properties
-	-
Solubility	
Solubility in water	n-octanol/water coefficient
Insoluble	-
9.2. Other information	
Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity

See section 10.3.

10.2. Chemical stability

The product is stable under the conditions noted in section 7.

10.3. Possibility of hazardous reactions

Can act as a catalyst for the decomposition of hydrogen peroxide.

Can react violently with nitric acid in the presence of ethanol.

Reacts with chlorotrifluoride and ethylene amine.

10.4. Conditions to avoid

See section 10.3.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reductants agents. See section 10.3.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
selenium	Rat	LD50 (OECD 401)	Oral	>5000 mg/kg bw
selenium	Rat	LC50 (dust, OPP 81-3)	Inhalation	>5,67 mg/l, 4h
silver	Rat	LD50	Ingestion	>2000 mg/kg bw
silver	Mouse	LD50	Ingestion	>10000 mg/kg

Silver: ADI 182 µg/person

Skin corrosion/irritation

No data

Serious eye damage/irritation

No data

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

No data

Carcinogenicity

No data

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

No data

STOT-repeated exposure

No data

Aspiration hazard

No data

Long term effects

Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Repeated long-term exposure to silver dust or fumes can gradually cause eyes, nail, internal organs and skin to turn a blue-grey colour.

According to EC-Regulation 1907/2006 (REACH)

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to destroy it.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
lead	Fish: Pimephales promelas, Oncorhynchus mykiss	LC50	96 h	pH 5.5 – 6.5: 40.8 – 810.0 µg Pb/L
lead	Fish: Pimephales promelas, Oncorhynchus mykiss	LC50	96 h	pH >6.5 – 7.5: 52.0 – 3,598.0 µg Pb/L
lead	Fish: Pimephales promelas, Oncorhynchus mykiss	LC50	96 h	pH > 7.5 – 8.5: 113.8 – 3,249.0 µg Pb/L
lead	Invertebrates: Daphnia magna, Ceriodaphnia dubia	LC50	48 h	pH 5.5 – 6.5: 73.6 – 655.6 µg Pb/L
lead	Invertebrates: Daphnia magna, Ceriodaphnia dubia	LC50	48 h	pH >6.5 – 7.5: 28.8 – 1,179.6 µg Pb/L
lead	Invertebrates: Daphnia magna, Ceriodaphnia dubia	LC50	48 h	pH > 7.5 – 8.5: 26.4 – 3,115.8 µg Pb/L
lead	Algae: Pseudok. subcapitata, Chlorella kesslerii	ErC50	72 h	pH 5.5 – 6.5: 72.0 – 388.0 µg Pb/L
lead	Algae: Pseudok. subcapitata, Chlorella kesslerii	ErC50	72 h	pH >6.5 – 7.5: 26.6 – 79.5 µg Pb/L
lead	Algae: Pseudok. subcapitata, Chlorella kesslerii	ErC50	72 h	pH > 7.5 – 8.5: 20.5 – 49.6 µg Pb/L
lead	Freshwater fish (different species)	EC10		17.8 – 1558.6 µg Pb/L
lead	Freshwater invertebrates (different species)	EC10		1.7 – 963.0 µg Pb/L
lead	Freshwater algae (different species)	EC10		6.1 – 190.0 µg Pb/L
lead	Freshwater higher plants: Lemna minor	EC10		85.0 – 1,025.0 µg Pb/L
lead	Marine fish: Cyprinodon variegatus	EC10		229.6 – 437.0 µg Pb/L
lead	Marine invertebrates (different species)	EC10		9.2 – 1409.6 µg Pb/L
lead	Marine algae (different species)	EC10		52.9 – 1234.0 µg Pb/L
lead	Marine higher plants: Champia parvula	EC10		11.9 µg Pb/L
lead	Freshwater sediment invertebrates (diff. species)	EC10		573.0 – 3,390.0 mg Pb/kg dw
lead	Marine sediment invertebrates (diff. species)	EC10		680.0 – 1,291.0 mg Pb/kg dw
lead	Terrestrial invertebrates (different species)	EC10		34.0 – 2,445.0 mg Pb/kg dw
lead	Terrestrial plants (different species)	EC10		57.0 – 6,774.0 mg Pb/kg dw
lead	Micro-organisms (different species)	EC10		97.0 – 7,880.0 mg Pb/kg dw
lead	Bacterial populations	EC10		Resp. 1.06 - 2.92 mg Pb/L
lead	Bacterial populations	EC10		Ammonia uptake 2.79 - 9.59 mg Pb/L
lead	Protozoan community	EC10		Mortality: 1.0 – 7.0 mg Pb/L
selenium	Fish (Oncorhynchus mykiss)	LC50 (440/2008/EC C.1.)	96 h	26,2 µg/l
selenium	Fish (Oncorhynchus mykiss)	NOEC (OECD 215)		1,57 µg/l
selenium	Daphnia Magna	EC50 (OECD 202)	48 h	160,3 µg/l
selenium	Daphnia Magna	NOEC (OECD 211)		3,42 µg/l
selenium	Algae	EC50 (OECD 201)	72 h	1,73 µg/l
selenium	Algae	EC10 (OECD 201)		0,547 µg/l
silver	Fish	LC50	96h	0.0062mg/l
silver	Daphnia	LC50	48h	0.0006 mg/l
silver	Algae	LC50	72h	0.002 mg/l
copper	Fish (Oncorhynchus mykiss)	LC50	96h	0,017 mg/l
copper	Daphnia (hyalina)	EC50	48h	0,0065 mg/l
copper	Algae (Selenastrum capricornutum)	IC50	72h	0,392 mg/l

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
lead	No	No data available	No data available

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC
No data available.			

12.4. Mobility in soil

The product (granules) is insoluble in water, but fine powder and some silver compounds can be highly soluble in water.

12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

According to EC-Regulation 1907/2006 (REACH)

12.6. Other adverse effects

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

The generation of waste should be avoided or minimized wherever possible. The transportation, storage, treatment, and disposal of waste material must be conducted in compliance with all applicable local/national authority regulations.

This product is recyclable. Consideration of disposal via this route should be given.

Waste

EWC code

10 08 99

Specific labelling

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Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	3288
14.2. UN proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (Rh, Ru Pills)
14.3. Transport hazard class(es)	6.1
14.4. Packing group	III
Notes	-
Tunnel restriction code	E

IMDG

UN-no.	3288
Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S. (Rh, Ru Pills)
Class	6.1
PG*	III
EmS	F-A, S-A
MP**	No
Hazardous constituent	-

IATA/ICAO

UN-no.
Proper Shipping Name
Class
PG*

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

14.6. Special precautions for user

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14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information

According to EC-Regulation 1907/2006 (REACH)

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

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. Only for industrial use. Pregnant and nursing women must not be exposed to the effects of this product. The risk, and possible technical precautions or design of the workplace to avoid such risk, must therefore be evaluated.

Demands for specific education

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Additional information

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Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)
EH40/2005

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H317 - May cause an allergic skin reaction.
H360 - May damage fertility or the unborn child.
H362 - May cause damage to organs through prolonged or repeated exposure.

The full text of identified uses as mentioned in section 1

PROC 2 = Use in closed, continuous process with occasional controlled exposure.
SU 3 = Industrial uses: Uses of substances as such or in preparations* at industrial sites.

Other symbols mentioned in section 2

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Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
The hazard classification has been calculated with the Meclas tool.

According to EC-Regulation 1907/2006 (REACH)

Emergency Numbers

Austria: Poison Control Centre Emergency helpline +43 1 406 43 43, 112

Belgium: 070 - 245 245

Bulgaria: +359 2 9154 409

Czech Republic: Toxikologické informační středisko Telefon: +420 224 919 293, +420 224 915 402

Denmark: Kontakt Gifflinien på tlf.nr.: 82 12 12 12 (åbent 24 timer i døgnet).

Estonia: 112, 16662, ((+372) 626 93 90)

Finland: 09-4711/Myrkytystietokeskus tai suora numero 09-471977 Myrkytystietokeskus/HUS, Tukholmankatu 17, 00029 HUS (Helsinki) 112

France: ORFILA (INRS) : + 33 (0)1 45 42 59 59. 24 heures sur 24 et 7 jours sur 7

Germany: Giftnotruf Berlin, Emergency telephone: +49 30 19240 (Tag und Nacht)

Greece: +30 10 779 3777

Hungary: Telefon: 06-80-20-11-99

Iceland: Neyðarlínan: Sími 112. Eitrunarmiðstöð Landsspítalans. Sími: 543 2222.

Ireland: +353 1 8379964

Italy: Centro antiveleni di Roma - Policlinico Umberto I tel. 06-49978000

Latvia: +371 704 2468

Lithuania: Visuomenės sveikatos centrams +370 5 236 20 52 arba +370 687 53378

Malta: 2425 0000

Netherlands: 30-2748888

Norway: Giftinformasjonssentralen på tlf.nr.: 22 59 13 00, 113

Poland: +48 58301 65 16 / +48 58 349 2831

Portugal: Em caso de intoxicacao, ligue 808 250 143

Romania: +40 21 3183606

Slovakia: +421 2 54 77 4166

Slovenia: + 386 41 650500

Spain: Servicio de Información Toxicológica Teléfono: + 34 91 562 04 20 (solo emergencias toxicológicas)

Información en español (24h/365 días)

Sweden: 112, 08-331231 (vardagar kl 9-17)

United Kingdom: 999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service)

Date of last essential change

(09-06-2020)

Section 2: Classification update H362 May cause damage to organs through prolonged or repeated exposure. Added to the previous version 01-06-2015)

Date of last minor change

(09-06-2020)

Section 13: EWC code 10 08 99 added.