

How to Read and Translate Risk and Safety Vernacular Phrases in Technical Texts

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Word Alchemy

wordalchemytranslation.com/Presentations.html

(presentation will be available for download)

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R & S Phrases

Topics for Today

- R & S Phrases
 - What are they and where do they come from
 - Where are they found
 - Examples
 - Not literal translations!
- Hazard and Precautionary Statements
 - What are they and where do they come from
 - Comparisons
- Resources

R & S Phrases

What are they?

R-phrases (short for Risk Phrases) are defined as *special risks attributed to dangerous substances and preparations*

S-phrases (short for Safety Phrases) are defined as *safety advice concerning dangerous substances and preparations*

R & S Phrases

What are they specifically?

- Phrases of 1-13 words to describe risk and safety aspects of dangerous substances
- Associated with identifying letter-number codes for brevity

Examples:

R10 – Flammable

R3 – Extreme risk of explosion by shock, friction, fire or other sources of ignition

S2 – Keep out of the reach of children

- Combinations also used

R & S Phrases

Where do they come from?

Before the EU...,

**European Coal and
Steel Community**



R & S Phrases

European Coal and Steel Community (ECSC, 1951-2002)

France, Germany (1 of 2), Italy, Benelux

1957 - list of commercial chemical substances, and
a set of phrases in 4 languages [DE, FR, IT, NL; the ECSC
member states] to include with packaging to describe:
risks [Gefahren/risques/rischi/gevaren]
safety [Sicherheit/prudence/prudenza/veiligheid]

R & S Phrases

Where do they come from?

New versions of the R- and S-phrases created for use on product labels, defined in

Annexes III & IV of **EU Directive 67/548/EEC**

8 categories of dangerous compounds

23 categories of substances

R & S Phrases

EU Directive 67/548/EEC:

“Approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances which are placed on the market in the Member States of the Community.”

Annex I: notes, names of elements and substance classes

Annex II: danger symbols (pictograms)

Annex III: risk phrases

Annex IV: safety phrases

In 11 European languages

[ES, DA, DE, EL, EN, FR, IT, NL, PT, FI, SV]

R & S Phrases

as the ECSC segued into the EU (⇒ 2002)
new legislative bases established.

The scope, content, definitions, etc. underwent evolution

- Consolidated & expanded in **EU Directive 2001/59/EC**
- Further updated in **EU Directive 2006/102/EC**

Defined:

21 categories of substances

10 categories of hazard (with identifying symbols and pictograms)

R & S Phrases

EU Directive 2006/102/EC:

Annex I: notes, names of elements and substance classes

Annex II: danger symbols (pictograms)

Annex III: risk phrases

Annex IV: safety phrases

Now in 22 European languages

[BG, CS, DA, DE, EL, EN, ES, ET, FI, FR, HU, IT, LT, LV,
MT, NL, PL, PT, RO, SK, SL, SV]

R & S Phrases

Example: R10

BG	Запалим	LT	Degi
CS	Hořlavý	HU	Kis mértékben tűzveszélyes
DA	Brandfarlig	MT	Jieħu n-nar
DE	Entzündlich	NL	Ontvlambaar
EL	Εύφλεκτο	PL	Produkt łatwopalny
EN	Flammable	PT	Inflamável
ES	Inflamable	RO	Inflamabil
ET	Tuleohtlik	SK	Horľavý
FR	Inflammable	SL	Vnetljivo
IT	Infiammabile	FI	Syttyvää
LV	Uzliesmojšs	SV	Brandfarligt

R & S Phrases

Where are they found?

- Product labels, shipping manifests
- MSDS/SDS/PSDS sheets and documentation
- Manufacturing instructions and batch records
- Legislation and regulations related to the above

Example – Herbicide Label

PEEL BACK FOR DIRECTIONS FOR USE LEAFLET

RouteOne

Rosate 36



20 Litre

MAPP 13889

PROTECT FROM FROST

A soluble liquid herbicide containing 360 g/litre glyphosate acid present as 480 g/litre (41.5% w/w) isopropylamine salt and polyoxyethyleneamine surfactant.
A foliar-applied, translocated herbicide for the control of annual and perennial weeds in a range of agricultural, horticultural, forestry, industrial, amenity and aquatic situations.



IRRITANT



DANGEROUS FOR THE ENVIRONMENT

RouteOne Rosate 36 – contains 480 g/litre (41.5% w/w) glyphosate isopropylamine salt and polyoxyethyleneamine.

IRRITATING TO SKIN
TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

KEEP OUT OF THE REACH OF CHILDREN
KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS
WHEN USING DO NOT EAT, DRINK OR SMOKE
AVOID CONTACT WITH EYES
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLenty OF WATER AND SEEK MEDICAL ADVICE
USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION
THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY
To avoid risks to man and the environment, comply with the instructions for use.

The Control of Substances Hazardous to Health (COSHH) Regulations may apply to the use of this product at work.

IMPORTANT INFORMATION
FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/INDUSTRIAL/AMENITY/FORESTRY HERBICIDE.

Crops: Wheat, durum wheat, barley, oats, oilseed rape, combining pea, mustard, field bean, linseed, sugar beet, swede, turnip, onion, leek, stubbles of all crops, grassland, hard surfaces, natural surfaces not intended to bear vegetation, permeable surfaces, overlying soil, all edible and non-edible crops (destruction of established vegetation prior to sowing or planting), apple, pear, plum, cherry, damson, enclosed waters, open waters, land immediately adjacent to aquatic areas, forest and farm forestry (weed control and chemical thinning by stump application and injection).

Maximum Individual Dose per hectare, Maximum Total Dose per hectare, Maximum Number of Treatments, Latest Time of Application, Other Specific Restrictions:) See under "Directions for Use"

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

SAFETY PRECAUTIONS

Operator protection
Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling or applying the concentrate.
WEAR SUITABLE PROTECTIVE CLOTHING (WATERPROOF JACKET AND TROUSERS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using a knapsack sprayer, hand-held rotary atomiser CDA sprayer and hand-held weedwiper equipment.
WEAR SUITABLE PROTECTIVE CLOTHING (WATERPROOF JACKET AND TROUSERS), SUITABLE PROTECTIVE GLOVES, RUBBER BOOTS AND FACE PROTECTION (FACESHIELD) when using spot-gun equipment, making cut-stump treatments or carrying out stem injection.
However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.
WASH CONCENTRATE from skin or eyes immediately.
DO NOT BREATHE SPRAY.
WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.
WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

Environmental protection
Do not contaminate water with the product or its container except when used as directed. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

Storage and disposal
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.
RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of the container safely.

For advice on medical emergencies, fires, spillages or chemical hazards, telephone: 0208 762 8322 (24 hour)

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains glyphosate and polyoxyethyleneamine); Class 9; Packing group III.

Approval Holder and Marketing Company:
Albaugh UK Ltd., Manor Farm, Eddlethorpe, Malton YO17 9QT Tel: 01653 658 657 Fax: 01653 658 050

PEEL BACK FOR DIRECTIONS FOR USE LEAFLET

Rosate 36, a glyphosate-based herbicide manufactured by Hughie Willet in the UK

Example – Glyphosate

Risk & safety phrases

R38	IRRITATING TO SKIN
R51/53	TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT
S2	KEEP OUT OF THE REACH OF CHILDREN
S13	KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS
S20/21	WHEN USING DO NOT EAT, DRINK OR SMOKE
S25	AVOID CONTACT WITH EYES
S26	IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE
S57	USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION
S35	THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY

Example – Ácido Clorhídrico

Risk & safety phrases



CORROSIVO

ÁCIDO CLORHÍDRICO 35 %.
(22° Bé.) $d \approx 1,18$ purísimo
HCl P. m. = 36,47

▲ fórmula ▲ peso molecular

1l. $\approx$ 1,18 kg
1kg. $\approx$ 0,85 l.
Densidad a 15/4. 1,180-1,185
LÍMITE MÁXIMO DE IMPUREZAS

aproximada
l/kg en líquidos

Residuo de calcinación

(en SO ₄)	0,005 %
Cloro (Cl).....	0,001 %
Bromuro (Br).....	0,01 %
Sulfato (SO ₄)	0,0005 %
Sulfito (SO ₃)	0,0005 %
Amonio (NH ₄)	0,001 %

R34 Provoca quemaduras. R37 Irritante para las vías respiratorias. S2 Mantener alejado del alcance de los niños. S26 En caso de contacto con los ojos, lavarlos inmediatamente con mucha agua y consultar a un médico.

Example – Alcool Isopropylique

Risk & safety phrases

BRENTAG BRENTAG S.A.
90, Avenue du Progrès
69680 CHASSIEU
Tél. 0 800 07 42 28

 **ALCOOL
ISOPROPYLIQUE
NATURE**

F - FACILEMENT INFLAMMABLE R 11 - S 7 - S 16

FACILEMENT INFLAMMABLE.
Conserver le récipient bien fermé.
Conserver à l'écart de toute flamme ou source d'étincelles -
Ne pas fumer.

Etiquetage CE N° 200-661-7 21° Apt. de la directive 67/548 CE

R11

S7

S16

R & S Phrases

Chemical substance trade is international

Extends far beyond the EU

Nations outside the EU
adopted / adapted / generated
R & S phrases for their own use

R & S Phrases

Russian Equivalents

R1	В сухом виде взрывоопасно	Explosive when dry
R23	Токсично при вдыхании	Toxic by inhalation
R43	Может вызвать сенсibilизацию при попадании на кожу	May cause sensitisation by skin contact
S18	Обращаться и вскрывать с осторожностью	Handle and open container with care.
S20	Не принимать пищу и напитки при работе с материалом	When using do not eat or drink
S27	Немедленно снять всю загрязненную одежду	Take off immediately all contaminated clothing.

R & S Phrases

Japanese Equivalents

R1	乾燥すると爆発する	Explosive when dry
R23	吸入すると毒性がある	Toxic by inhalation
R43	皮膚接触により感作性を 引き起こすおそれがある	May cause sensitisation by skin contact
S18	取り扱いおよび容器を開 ける際には注意する	Handle and open container with care.
S20	使用中は飲食厳禁	When using do not eat or drink
S27	汚染された衣服は直ちに 脱ぎ去ること	Take off immediately all contaminated clothing.

R & S Phrases

Chinese Equivalents

R1	干燥时易爆	Explosive when dry
R23	吸入有毒	Toxic by inhalation
R43	皮膚接觸可能導致過敏	May cause sensitisation by skin contact
S18	小心處理容器與開啟容器	Handle and open container with care.
S20	使用中嚴禁飲食	When using do not eat or drink
S27	立即脫去被污染了的衣服	Take off immediately all contaminated clothing.

R & S Phrases

Korean Equivalents

R1	건조한 상태에서 폭발성을 가짐	Explosive when dry
R23	흡입 시 유독함	Toxic by inhalation
R43	피부 접촉 시 민감한 영향을 줌	May cause sensitisation by skin contact
S18	취급 및 용기를 열 때 주의	Handle and open container with care.
S20	사용 중 취식 금지	When using do not eat or drink
S27	오염된 옷은 즉시 벗는다	Take off immediately all contaminated clothing.

R & S Phrases

Esperanto Equivalents

R1	Eksplodema kiam seka	Explosive when dry
R23	Toksa kiam inhalita	Toxic by inhalation
R43	Povas kaŭzi sentokapablon dum haŭtokontakto	May cause sensitisation by skin contact
S18	Manipulu kaj zorge malfermu kemiujon	Handle and open container with care.
S20	Ne manĝu nek drinku dum manipulado	When using do not eat or drink
S27	Tuĵe deprenu ĉian malpuran vestaĵaron	Take off immediately all contaminated clothing.

R & S Phrases

Latin?

R22: *Harmful if swallowed*
~ Noxiam esse, si absorbeatur

ᚱᚰᚦᚦᚦ ᚱᚦᚦ (Klingon)?

R22: *Harmful if swallowed*
~ joch vaj ghup

ᚱᚦᚦᚦᚦᚦ ᚱᚦᚦ

R & S Phrases

Literal translations don't always work!

The phrasing is standardized, but not necessarily what a translator would consider equivalent.

For example: **R15 (DE)**

Reagiert mit Wasser unter Bildung leicht entzündlicher Gase

This could be translated into English literally as:

Reacts with water to form readily flammable gases

But the standardized form is:

Contact with water liberates extremely flammable gases

R & S Phrases

Literal translations don't always work!

Another example: **R33** (JA)

くりかえし蓄積すると危険なもの

This could be translated into English literally as:

Repeated accumulation is hazardous

But the standardized form is:

Danger of cumulative effects

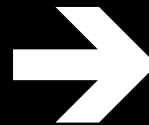
R & S Phrases



H & P Statements

Transition

EU-based → UN-based system



H & P Statements

What are they?

H-statements (short for Hazard statements)
defined as:

*standardized phrases about the hazards of chemical substances and mixtures
that can be translated into different languages*

P-statements (short for Precautionary statements)
defined as:

*standardized phrases giving advice about the correct handling
of chemical substances and mixtures,
which can be translated into different languages*

H & P Statements

Where do they come from?

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

[http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html]

[<https://www.osha.gov/dsg/hazcom/global.html>]

[<http://www.hse.gov.uk/chemical-classification/index.htm>]

[http://www.meti.go.jp/policy/chemical_management/int/ghs_text.html]

H & P Statements

GHS

Developed by the UN, beginning in 1992 to harmonize and supersede the separate systems currently used in the EEC, the Americas, and other regions

17 physical hazard categories

10 health hazard categories

2 environmental hazard categories (aquatic toxicity and ozone layer)

H & P Statements

Why GHS?

The goal of the GHS system is that:

...existing systems should be harmonized in order to develop a single, globally harmonized system to address classification of chemicals, labels, and safety data sheets.

First version released in 2003

Updated every two years since then

Final (voluntary) adoption deadlines differ by country

Optional in Mexico (June 2011), alternative to national system

For the US, final adoption by June 1, 2015

H & P Statements

EU homologated the GHS system
into their new CLP Regulation (2008)
(Classification, Labelling and Packaging)

Additional EU-H statements
(unrepresented R-phrase substitutes)

H & P Statements

Hazard statements:

H200 – H413

(EEC added EUH 001 – EUH 401 to correlate with R-phrases)

Precautionary statements:

P101 – P501

Initially published in 2003 in 6 official UN languages
[AR, EN, ES, FR, RU, ZH]

EU CLP version published in 2008
In 24 EU languages

H & P Statements

Example: H310

Arabic	سامة إذا ابتلعت	French	Toxique en cas d'ingestion
Chinese	吞咽会中毒	Russian	Токсично при проглатывании
English	Toxic if swallowed	Spanish	Tóxico en caso de ingestión

Example: P234

Arabic	تبقى باردة	French	Tenir au frais
Chinese	保持低温	Russian	Хранить в прохладном месте
English	Keep cool	Spanish	Mantener fresco

H & P Statements

More Harmonized?

Yes!

e.g., H340

English	May cause genetic defects
French	Peut induire des anomalies génétiques
German	Kann genetische Defekte verursachen
Japanese	遺伝性疾患のおそれ
Spanish	Puede provocar defectos genéticos

H & P Statements

Not yet completely harmonized at country level

Hazard / Precautionary Statement	Europe Directive No 1272/2008 ONU: SGA	Mexico NMX-R-019-SCFI-2011
H240	Peligro de explosión en caso de calentamiento	Puede explotar al calentarse
H290	Puede ser corrosivo para los metales	Puede ser corrosiva para los metales
H317	Puede provocar una reacción alérgica en la piel.	Puede provocar una reacción cutánea alérgica
P201	Pedir instrucciones especiales antes del uso	Procurarse las instrucciones antes del uso
P231	Manipular en gas inerte	Manipular en un medio de gas inerte
P270	No comer, beber ni fumar durante su utilización	No comer, beber o fumar mientras se manipula este producto

Example – SN洗淨剤 (n-hexane)

 未来材料に挑戦する		業 務 用	
SN洗淨剤			
製造番号		NET	kg
    		危険 指針番号 : 128 国運番号 : 1208	
火気厳禁 危険物第四類 第一石油類 危険等級Ⅱ			
成 分 : ノルマルヘキサン			
危険有害性情報			
●引火性の高い液体および蒸気。 ●皮膚刺激。 ●強い眼刺激。 ●飲み込み、気道に侵入すると生命に危険のおそれ。 ●生殖能又は胎児への悪影響のおそれの疑い。 ●長期又は反復暴露による中枢神経系、末梢神経系の障害。 ●呼吸器への刺激のおそれ。 ●水生生物に毒性。 ●眠気又はめまいのおそれ。			

H225
H315
H319
H304
H361

H335
H401
H336

Example – Acetone

H225

H319

H336

EUH066

P210

P261

P305 + P351

+ P338

P337 + P313

P235 + P403

Gefahrenhinweise:

Flüssigkeit und Dampf leicht entzündbar.
Verursacht schwere Augenreizung.
Kann Schläfrigkeit und Benommenheit verursachen.

Wiederholter Kontakt kann zu spröder oder rissiger Haut führen.

Sicherheitshinweise:

Von Hitze, heißen Oberflächen, Funken, offenen Flammen sowie anderen Zündquellenarten fernhalten. Nicht rauchen.

Einatmen von Dampf vermeiden.
BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser ausspülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter ausspülen.

Bei anhaltender Augenreizung: Ärztlichen Rat einholen/ärztliche Hilfe hinzuziehen.

Kühl an einem gut belüfteten Ort aufbewahren.



Aceton

Technisch reines
Lösungs- und
Reinigungsmittel



Exemple – Acide acétique

Acide acétique

$\text{CH}_3\text{-COOH}$; $M=60,052 \text{ g/mol}$

C > 90 %



DANGER

H226: Liquide et vapeurs inflammables

H314 (1A): Provoque des brûlures de la peau et des lésions oculaires graves

P210: Tenir à l'écart de la chaleur/des étincelles/des flammes nues/des surfaces chaudes-Ne pas fumer

P260: Ne pas respirer les poussières/fumées/gaz/brouillards/vapeurs/aérosols

P280: Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage

P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX : rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer

P310: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin

N° CAS : 64-19-7

N° CE : 200-580-7

Consultez toujours l'étiquette: <http://etiquettes.cleancanada.com>

R/S & H/P Phrase Resources

The screenshot shows a web browser window with the address bar displaying "chemsub.online.fr". The page header features the "ChemSub Online" logo and the tagline "The Free Web Portal and Information System on Chemical Substances". A navigation menu includes links for "Home", "Glossary", "Example list", "Top 500", and "Help". A "Google Custom Search" bar is also present. The main search area contains a dropdown menu labeled "Name or Synonym", a text input field, and five buttons: "EXACT MATCH", "STARTS WITH", "CONTAINS", "ENDS WITH", and "RESET". Below the search area, a paragraph describes the database and its search capabilities, followed by the last update date: "Saturday 31 October 2015".

ChemSub Online
The Free Web Portal and Information System on Chemical Substances

Home Glossary Example list Top 500 Help

Google Custom Search SEARCH

Crop visible window area

Name or Synonym

EXACT MATCH STARTS WITH CONTAINS ENDS WITH RESET

ChemSub Online is a free web-based database which allows you to retrieve information on chemical substances.

To perform your searches and generate lists, you may use the appropriate checkbox: EXACT MATCH, STARTS WITH, CONTAINS or ENDS WITH.

Last update: Saturday 31 October 2015.

Search on full or partial substance name to find equivalent names and synonyms, substance data and R/S and H/P phrase information in multiple languages

<http://chemsub.online.fr/>

R/S & H/P Phrase Resources

KEMINACO

[Risk & Safety Phrases](#) [Hazard & Precautionary Statements](#) [Sources](#) [News](#) [FAQ](#) [Imprint](#)

Use [Subvise](#) to spend less time tracking the REACH status of your chemicals!

Chemical **Hazard** & **Precautionary** Statements

EUH001 EUH006 EUH014 EUH018 EUH019 EUH029 EUH031 EUH032 EUH044 EUH059 EUH066 EUH070 EUH071 EUH201 EUH201A EUH202 EUH203 EUH204 EUH205 EUH206 EUH207 EUH208 EUH209 EUH209A EUH210 EUH401 H200 H201 H202 H203 H204 H205 H206 H207 H208	P101 P102 P103 P201 P202 P210 P211 P212 P220 P221 P222 P223 P230 P231 P231 + P232 P232 P233 P234 P235 P235 + P410 P240 P241 P242 P243 P244 P250 P251 P260 P261 P262 P263 P264 P270 P271 P272	Arabic Bulgarian Chinese Croatian Czech Dansk Dutch English Estonian Finnish French German Greek Hungarian Indonesian Irish Italian Japanese Korean Latvian Lithuanian Malay Maltese Norwegian Polish Portuguese Romanian Russian Serbian Slovak Slovenian Spanish Swedish Thai Turkish
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Reset selection

Show selected phrases

☐ No tables, please!

Download selected phrases as XML

Download selected phrases as XLS

Please enter at least one search term

Search phrases

Search on H/P statement codes (R/S phrases too!) and language(s)

[<http://schoolscout24.de/cgi-bin/keminaco/hppinput.cgi>]

What did we learn today?

- R & S Phrases / H & P Statements
- These phrases/statements belong in your TM
- Don't translate them literally – use the equivalents
- Found in many types of technical texts
- H/P statements standard now, but R/S phrases still turn up
- Resources

R/S & H/P Phrase Resources

1

MSDS Hyperglossary, links to English keyword definitions [www.ilpi.com/msds/ref/]:

Risk Phrases (R-phrases) [www.ilpi.com/msds/ref/riskphrases.html]

Safety Phrases (S-phrases) [www.ilpi.com/msds/ref/safetyphrases.html]

Hazard statements (H statements) [www.ilpi.com/msds/ref/hstatements.html]

Precaution statements (P statements) [www.ilpi.com/msds/ref/pstatements.html]

MSDS Europe (CLP)

R & S phrases, H & P statements, select language on the right:

(CZ, DE, EN, ES, FR, HR, HU, IT, PL, RO, RU, SK, SL)

[www.msds-europe.com/kateg-161-1-msds_information.html]

Keminaco (CLP), Chemical Risk & Safety Phrases

(Martin Michel of Berlin, Germany)

in 23 European languages, can output tables

(BG, CZ, DA, DE, EL, EN, ES, ET, FI, FR, HU, IT, LV, MT, NL, NO, PL, PT, RO, SK, SL, SV)

R&S phrases: [schoolscout24.de/cgi-bin/rsp/rspinput.cgi]

H&P statements: [schoolscout24.de/cgi-bin/hpp/hppinput.cgi]

R/S & H/P Phrase Resources

2

ChemSub Online

Substance name search

find chemical name synonyms and R/S H/P information

click on the R/S-phrase or H/P statement for language equivalents

[chemsub.online.fr]

EU CLP Hazard and Precautionary Statements in 24 EU languages

[BG, CS, DA, DE, EL, EN, ES, ET, FI, FR, GA, HR, HU, IT, LV, LT, MT, NL, PL, PT, RO, SK, SL, SV]

[ec.europa.eu/enterprise/sectors/chemicals/files/ghs/signalwords_hs_ps_en.xls]

Wikipedia articles with lists & links to other languages:

en.wikipedia.org/wiki/List_of_R-phrases

en.wikipedia.org/wiki/List_of_S-phrases

en.wikipedia.org/wiki/GHS_hazard_statement

en.wikipedia.org/wiki/GHS_precautionary_statements

Emergency Response Guidebook (North America, references for chemical nomenclature, first aid, emergency responses, public safety and hygiene, etc.)

EN: <http://tinyurl.com/nx9vmxl>

ES: <http://tinyurl.com/ofwmsfh>

FR: <https://www.tc.gc.ca/media/documents/canutec-fra/GMU2012.pdf>

R/S & H/P Phrase Resources

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Standards publications and other information sources:

Text of **Council Directive 2006/102/EC (CLP)**, in European languages, Nov., 2006)
[eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2006.363.01.0241.01.ENG]

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

UN [www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html]

US [www.osha.gov/dsg/hazcom/global.html]

UK [www.hse.gov.uk/chemical-classification/index.htm]

JP [www.meti.go.jp/policy/chemical_management/int/ghs_text.html]

Norma Mexicana, Sistema Armonizado de Clasificación y Comunicación de Peligros de los Productos Químicos.

[trabajoseguro.stps.gob.mx/trabajoseguro/boletinesanteriores/2011/bol039/vinculos/NMX-R-019-SCFI-2011.pdf]

European Chemicals Agency "Chemical Labels are Changing" (European languages):

[ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7639&furtherPubs=yes]

How to Read and Translate Risk and Safety Vernacular Phrases in Technical Texts

La Salle University
Philadelphia - 25 April 2016

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